



SPLIT-TYPE, HEAT PUMP AIR CONDITIONERS

Changes for the Better

November 2008

No. OCS12

REVISED EDITION-A

TECHNICAL DATA BOOK

<Indoor unit>

[Model names]

HYPER HEATING INVERTER

**PLA-A-BA
PKA-A-GA
PKA-A-GAL
PKA-A-FA
PKA-A-FAL**

Revision :

- PUZ-HA30NHA is added in REVISED EDITION-A.
- Some descriptions have been modified.

- Please void OCS12.

<Outdoor unit>

[Model name]

**PUZ-HA30NHA
PUZ-HA36NHA**

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Mr. SLIM™

For information on service, please refer to the service manual as follows.

1-1. INDOOR UNIT

Model name	Service Ref.	Service Manual No.
PLA-A18/30/36BA	PLA-A18BA PLA-A18BA ₁ PLA-A30BA ₁ PLA-A36BA PLA-A36BA ₁	OCH420 OCB420
PKA-A18GA PKA-A18GAL	PKA-A18GA/GA ₁ /GA ₂ PKA-A18GAL/GAL ₁ /GAL ₂	OC369
PKA-A30/36FA PKA-A30/36FAL	PKA-A36FA/FA ₁ /FA ₂ PKA-A30FA ₂ PKA-A36FAL/FAL ₁ /FAL ₂ PKA-A30FAL ₂	

1-2. OUTDOOR UNIT

Model name	Service Ref.	Service Manual No.
PUZ-HA30/36NHA	PUZ-HA30/36NHA	OCH426 OCB426

2

SPECIFICATIONS

Model name	Indoor unit		PLA-A30BA	PLA-A36BA	PKA-A30FA(L)	PKA-A36FA(L)
Cooling	Outdoor unit		PUZ-HA30NHA	PUZ-HA36NHA	PUZ-HA30NHA	PUZ-HA36NHA
	Max. Capacity	BTU/h	30,000	36,000	30,000	34,200
	Rated Capacity	BTU/h	30,000	36,000	30,000	34,200
	Min. Capacity	BTU/h	18,000	18,000	18,000	18,000
	Total Input	W	2,450	3,120	2,730	2,950
	EER	BTU/h/W	12.2	11.5	11.0	11.6
	SEER	BTU/h/W	15.6	16.0	14.5	16.0
	Moisture Removal	Pints/h	7.2	6.8	7.9	7.1
	*1 SHF		0.73	0.79	0.70	0.77
	Heating	Max. Capacity	BTU/h	34,000	40,000	34,000
Rated Capacity		BTU/h	32,000	38,000	32,000	38,000
Min. Capacity		BTU/h	18,000	18,000	18,000	18,000
Total Input		W	3,440	3,230	3,460	3,100
COP		W/W	2.73	3.45	2.71	3.59
*1 HSPF(4/5)		BTU/h/W	8.8 / 7.0	9.4 / 7.3	8.9 / 7.2	9.4 / 7.3
Capacity		BTU/h	32,000	38,000	32,000	38,000
Heating at 17°F(-8.3°C)	Total Input	W	5,720	5,300	5,600	5,300
	COP	W/W	1.64	2.10	1.67	2.10
Heating at 5°F(-15°C)	Capacity	BTU/h	32,000	38,000	32,000	38,000
	Total Input	W	6,630	5,860	6,370	5,860
Power supply	COP	W/W	1.41	1.90	1.47	1.90
	Phase, Cycle, Voltage		1phase, 60Hz, 208/230V		1phase, 60Hz, 208/230V	
Voltage	Breaker size	A	30		30	
	Indoor - Outdoor S1 - S2		AC208/230V		AC208/230V	
	Indoor - Outdoor S2 - S3		DC24V		DC24V	
Indoor unit	Indoor - Remote Controller		DC12V		DC12V : Wired type	
	MCA	A	1	2	1	
	MOCP	A	15		15	
	Fan Motor	F.L.A.	0.51	1.00	0.43	0.52
	Fan Motor Output	W	50	120	45	70
	Airflow (Lo-M2-M1-Hi) DRY	CMM	14-16-18-21	20-23-26-30	15-20 (Lo-Hi)	22-28 (Lo-Hi)
	Airflow (Lo-M2-M1-Hi) WET	CMM	13-15-17-20	19-22-25-29	14-18 (Lo-Hi)	20-25 (Lo-Hi)
	Airflow (Lo-M2-M1-Hi) DRY	CFM	490-570-640-740	710-810-920-1060	530-705 (Lo-Hi)	780-990 (Lo-Hi)
	Airflow (Lo-M2-M1-Hi) WET	CFM	460-530-600-710	670-770-880-1030	480-635 (Lo-Hi)	700-890 (Lo-Hi)
	External pressure	Pa	0		0	
	Sound level (Lo-M2-M1-Hi)	dB(A)	28-30-32-34		32-34-37-40	39-45 (Lo-Hi) 46-49 (Lo-Hi)
	External finish (Grille)		White Munsell 6.4Y 8.9/0.4		White Munsell 3.4Y 7.7/0.8	
	Dimension Unit (Grille)	W : mm[inch]	840(950) [33-1/16(37-3/8)]		1400 [55-1/8] 1680 [66-1/8]	
		D : mm[inch]	840(950) [33-1/16(37-3/8)]		235 [9-1/4]	
		H : mm[inch]	258(35) [10-3/16(1-3/8)] 298(35) [11-3/4(1-3/8)]		340 [13-3/8]	
Weight Unit(Grille)	kg	23(6)		25(6)	24 28	
Weight Unit(Grille)	lbs	51(13)		55(13)	53 62	
Field drain pipe size	mm[inch]	O.D. 32 [1-1/4]		I.D. 20 [13/16]		
Remote Controller		Attached in Grille		Attached in Indoor unit		
Outdoor unit	MCA	A	28		28	
	MOCP	A	40		40	
	Fan Motor	F.L.A.	0.4 + 0.4		0.4 + 0.4	
	Fan Motor Output	W	60 + 60		60 + 60	
	Compressor	Type	ANB33FJEMT	ANB33FJCMT	ANB33FJEMT	ANB33FJCMT
		R.L.A.	18		18	
		L.R.A.	27.5		27.5	
	Air flow	CMM[CFM]	100[3,530]		100[3,530]	
	Refrigerant Control		Electronic Expansion Valve		Electronic Expansion Valve	
	Defrost Method		Reverse Cycle		Reverse Cycle	
	Sound level at cooling	dB(A)	52		52	
	Sound level at heating	dB(A)	53		53	
	External finish		Ivory Munsell 3Y 7.8/1.1		Ivory Munsell 3Y 7.8/1.1	
	Dimension	W : mm[inch]	950 [37-3/8]		950 [37-3/8]	
		D : mm[inch]	330 + 30 [13 + 1-3/16]		330 + 30 [13 + 1-3/16]	
H : mm[inch]		1,350 [53-1/8]		1,350 [53-1/8]		
Weight	kg[lbs]	121 [267]		121 [267]		
Refrigerant	Type	R410A		R410A		
	Charge	kg[lbs, oz]	5.5 [12 lbs]		5.5 [12 lbs]	
	Oil	L[oz]	1.4(FV50S) [45]		1.4(FV50S) [45]	
Refrigerant pipe size	Gas side O.D.	mm[inch]	15.88 [5/8]		15.88 [5/8]	
	Liquid side O.D.	mm[inch]	9.52 [3/8]		9.52 [3/8]	
Refrigerant pipe length	Height difference		Max.30m [Max.100ft]		Max.30m [Max.100ft]	
	Length		Max.75m [Max.245ft]		Max.75m [Max.245ft]	
Refrigerant Piping		Not supplied		Not supplied		
Connection Method		Flared		Flared		

NOTES : *1.Rating conditions (cooling)-Indoor : D.B. 26.7°C(80°F), W.B. 19.4°C(67°F) Outdoor : D.B. 35°C(95°F), W.B. 23.9°C(75°F)
 (heating)-Indoor : D.B. 21.1°C(70°F), W.B. 15.6°C(60°F) Outdoor : D.B. 8.3°C(47°F), W.B. 6.1°C(43°F)
 *2.Rating conditions (heating)-Indoor : D.B. 21.1°C(70°F), W.B. 15.6°C(60°F) Outdoor : D.B. -8.3°C(17°F), W.B. -9.4°C(15°F)
 *3.Rating conditions (heating)-Indoor : D.B. 21.1°C(70°F), W.B. 15.6°C(60°F) Outdoor : D.B. -15°C(5°F), W.B. -15°C(5°F)

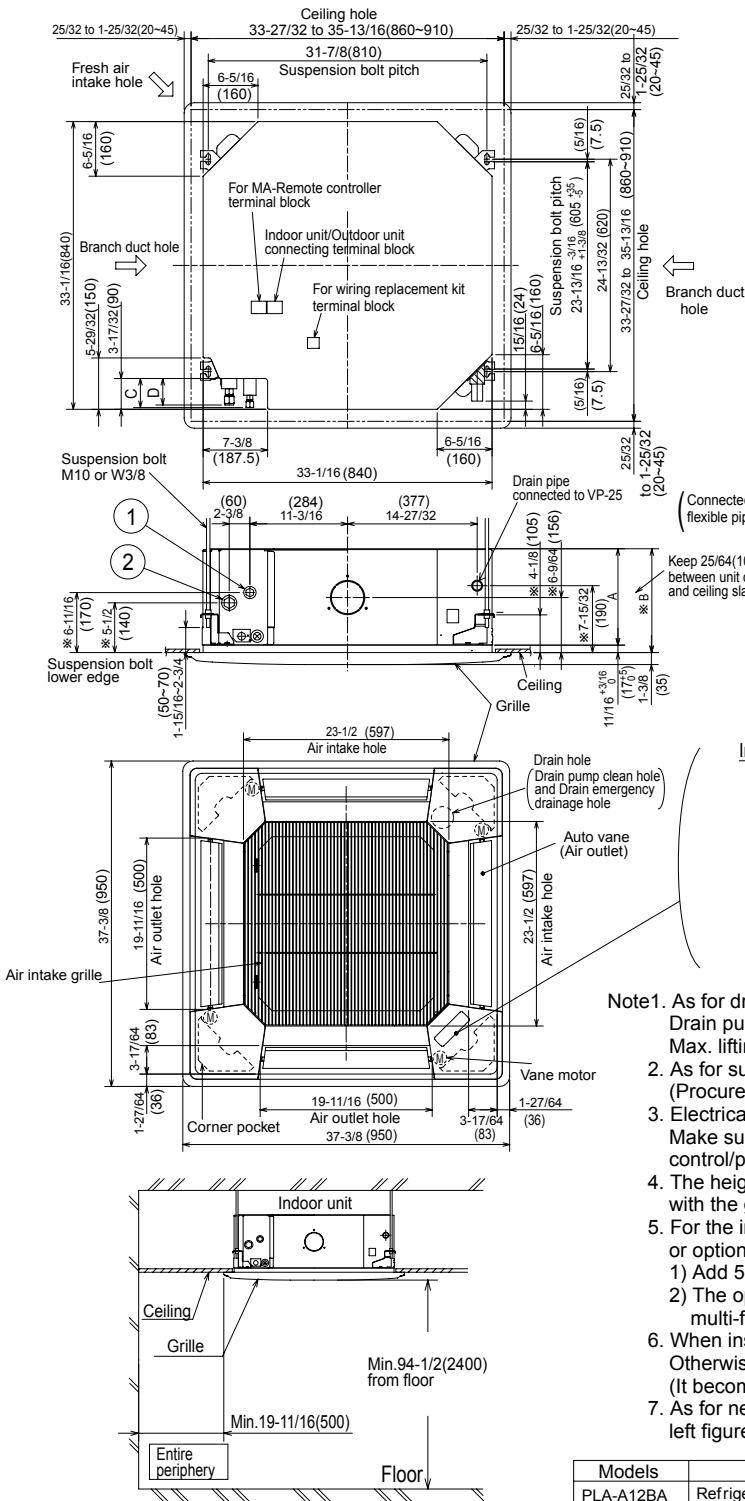
Operating range

Cooling	Indoor intake air temperature		Outdoor intake air temperature
	Maximum	D.B. 32°C(90°F), W.B. 23°C(73°F)	D.B. 46°C(115°F)
Minimum	D.B. 19°C(66°F), W.B. 15°C(59°F)	D.B. -18°C(0°F)*	
Heating	Maximum	D.B. 28°C(83°F)	D.B. 21.1°C(70°F), W.B. 15°C(59°F)
	Minimum	D.B. 17°C(63°F)	D.B. -25°C(-13°F), W.B. -25°C(-13°F)

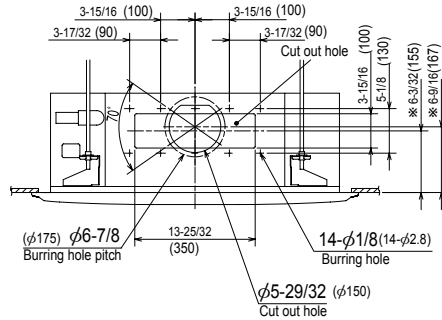
* In case that the wind baffle is installed. (In case that the wind baffle is not installed, the minimum temperature will be -5°C(23°F)DB.)

INDOOR UNIT PLA-A18BA PLA-A30BA PLA-A36BA

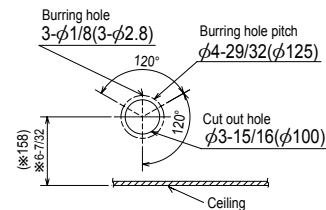
Unit : inch (mm)



Detail connecting of branch duct (Both aspects)



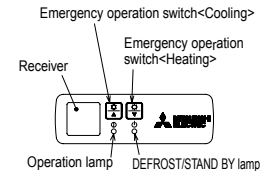
Detail drawing of fresh air intake hole



In case of standard grille



In case of wireless remote controller

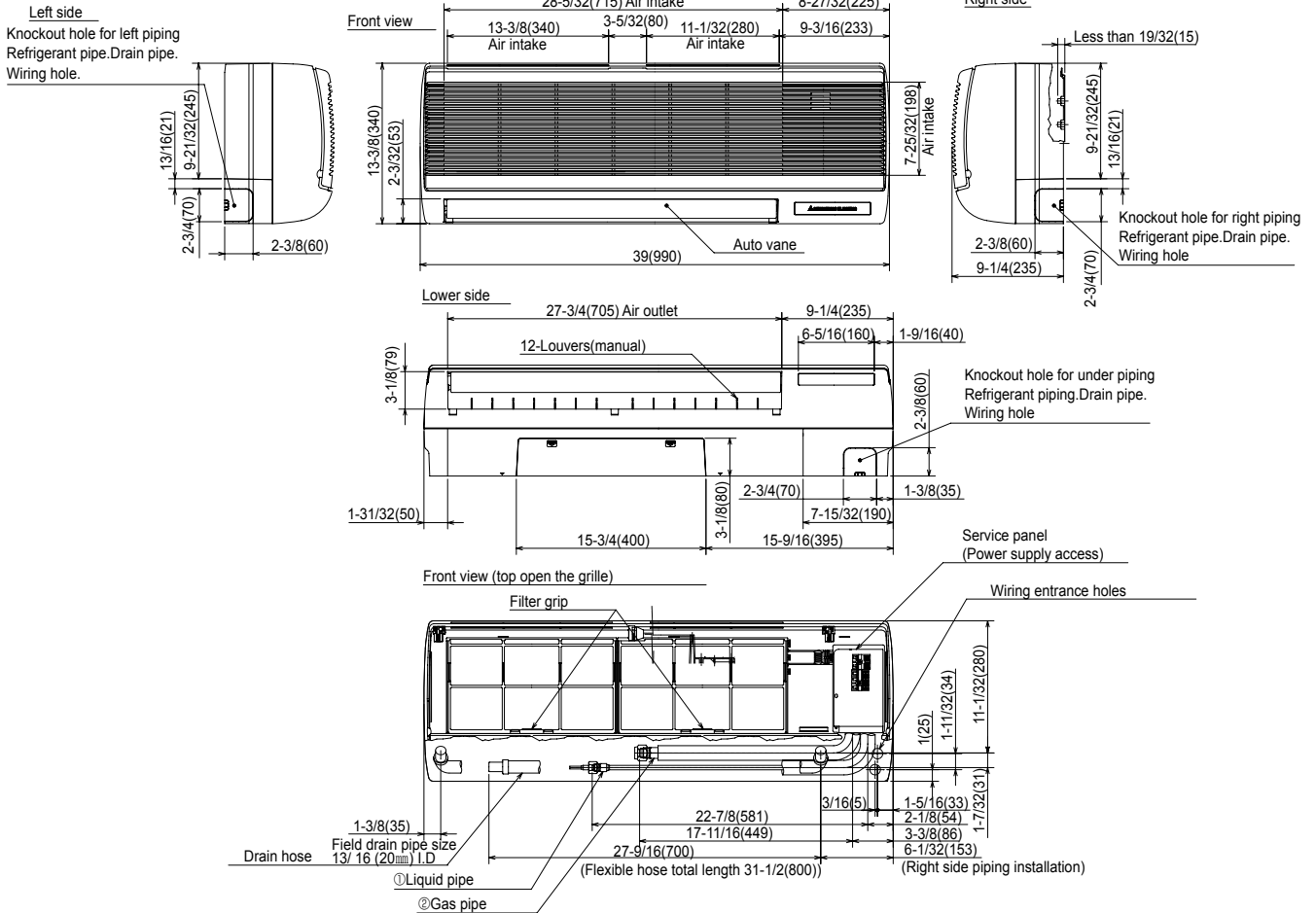


- Note1. As for drain pipe, please use VP-25(O.D. φ32 PVC TUBE). Drain pump is included.
 Max. lifting height is 70-7/18(850mm) from the ceiling.
- As for suspension bolt, please use M10 or W3/8. (Procured at local site)
 - Electrical box may be removed for the service purpose. Make sure to slack the electrical wire little bit for control/power wires connection.
 - The height of the indoor unit is able to be adjusted with the grille attached.
 - For the installation of the optional high efficiency filter or optional multi-functional casement.
 - Add 5-5/16 (135mm) * to the dimensions * marked on the figure.
 - The optional high efficiency filter becomes optional multi-functional casement and concomitant use.
 - When installing the branch ducts, be sure to insulate adequately. Otherwise condensation and dripping may occur. (It becomes the cause of dew drops/water dew.)
 - As for necessary installation/service space, please refer to the left figure.

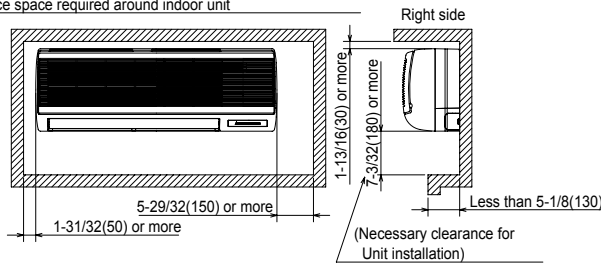
Models	①	②	A	B	C	D
PLA-A12BA PLA-A18BA	Refrigerant pipe ...φ 6.35mm Flared connection ...1/4	Refrigerant pipe ...φ 12.7mm Flared connection ...1/2	9-1/2 (241)	10-3/16 (258)	3-5/32 (80)	2-29/32 (74)
PLA-A24BA PLA-A30BA	Refrigerant pipe ...φ 9.52mm Flared connection ...3/8	Refrigerant pipe ...φ 15.88mm Flared connection ...5/8	11-1/16 (281)	11-3/4 (298)	3-11/32 (85)	3-1/32 (77)

PKA-A18GA PKA-A18GAL

Unit : inch (mm)



Service space required around indoor unit

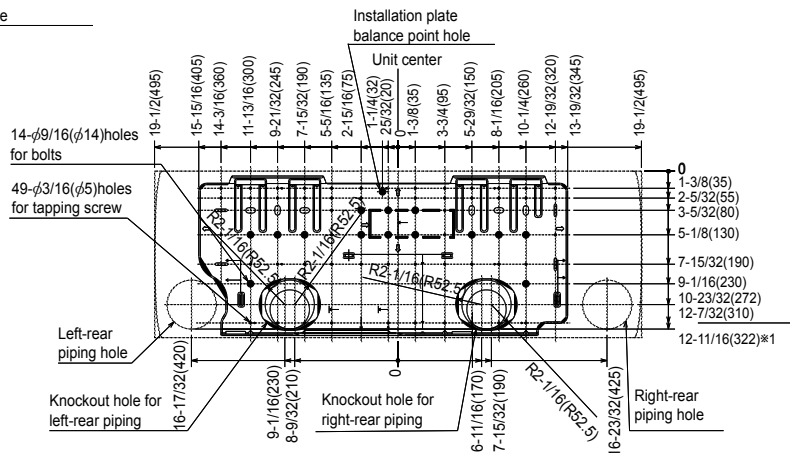


MODEL	18
①Liquid pipe	1/4
②Gas pipe	1/2

Sleeve *1	Through hole
ø2-15/16(ø75)	ø2-15/16~ø3-5/32 (ø75~ø80)

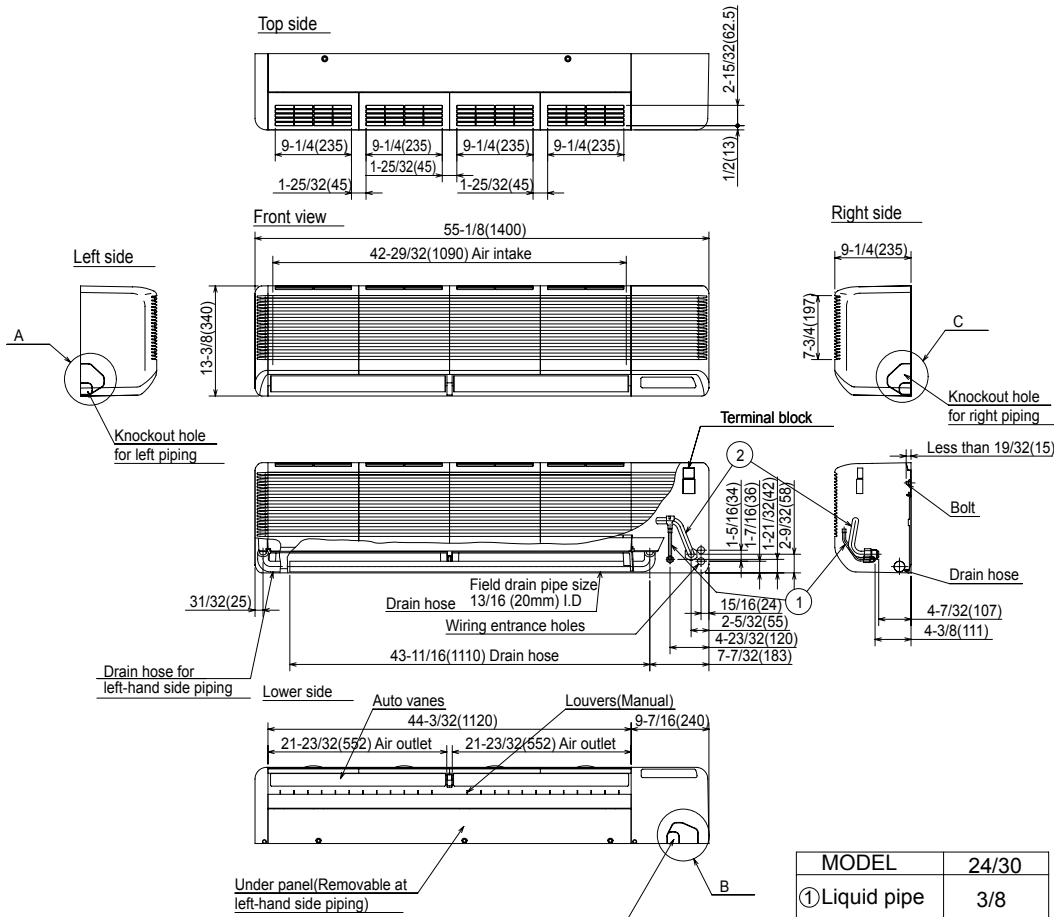
*1 Sleeves are available on the market.
*2 This size shows the lower end of through hole.

Details of installation plate



PKA-A30FA PKA-A30FAL

Unit : inch (mm)

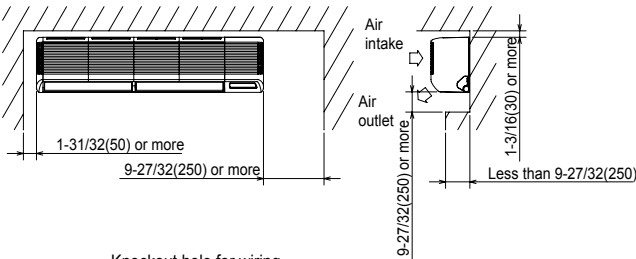


MODEL	24/30
① Liquid pipe	3/8
② Gas pipe	5/8

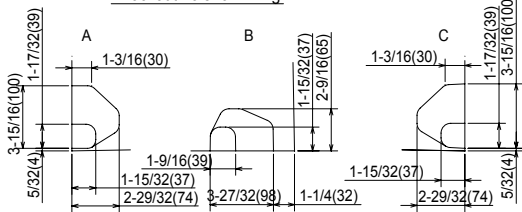
Sleeve *1	Through hole
ø3-17/32 (ø90)	ø3-17/32~ø3-15/16 (ø90~ø100)

*1 Sleeves are available on the market.

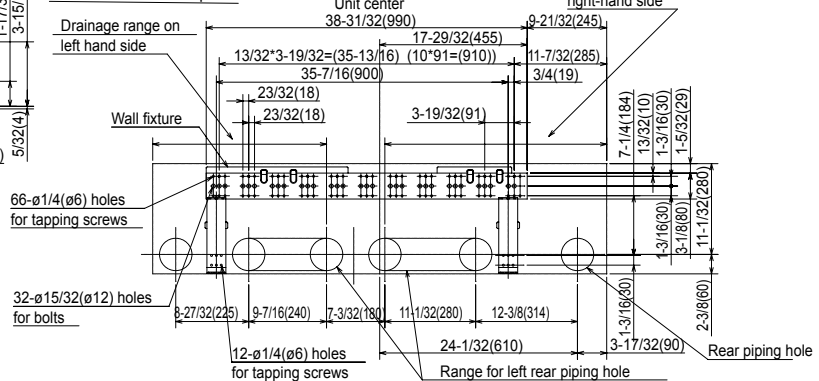
Service space required around indoor unit



Knockout hole for wiring

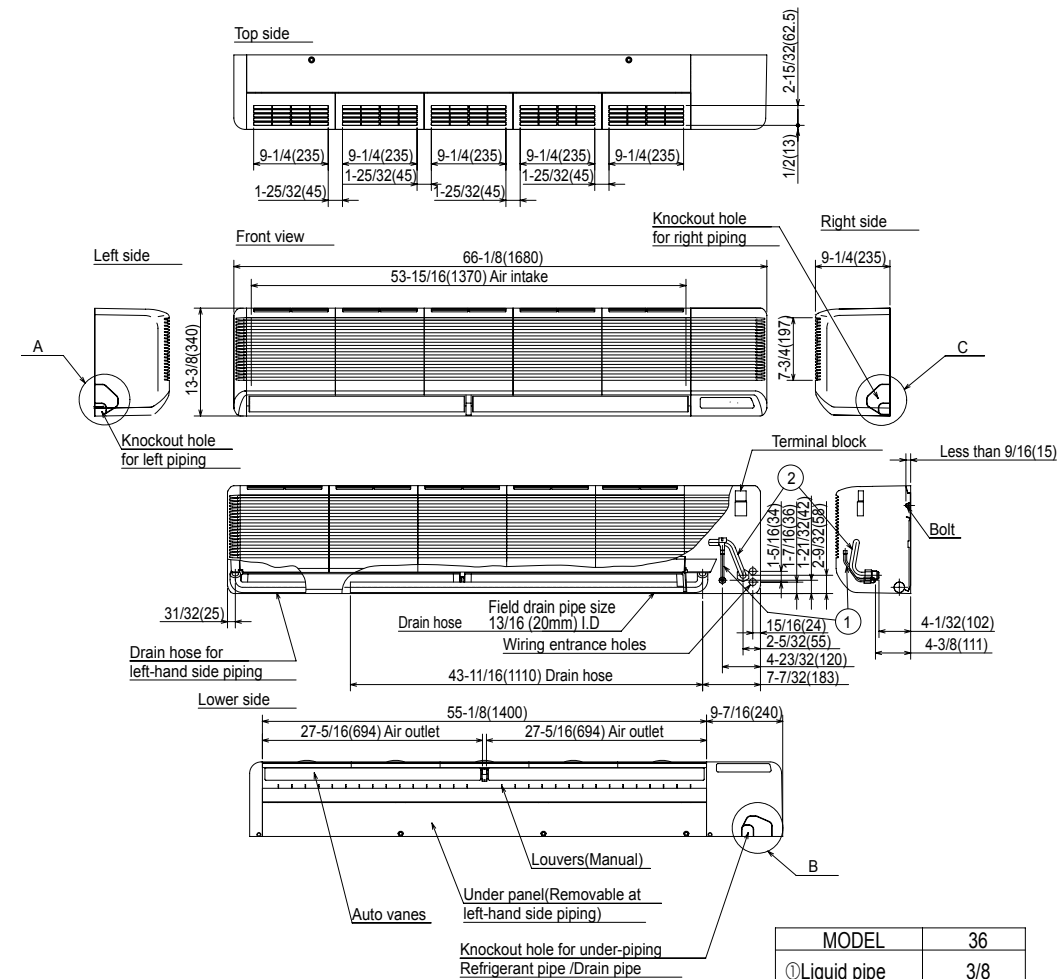


Details of installation plate



PKA-A36FA PKA-A36FAL

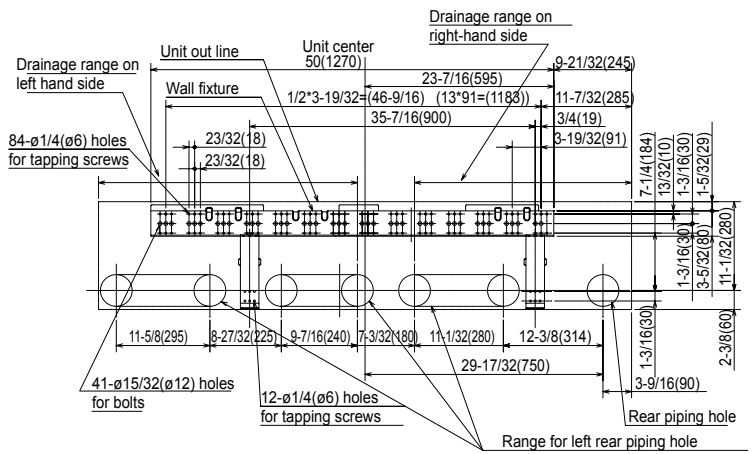
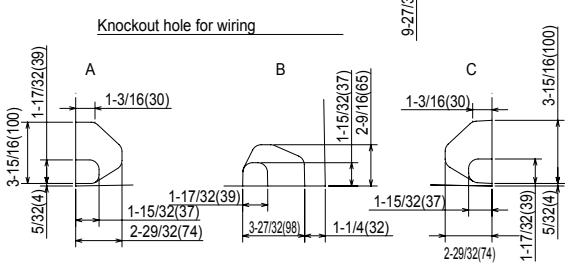
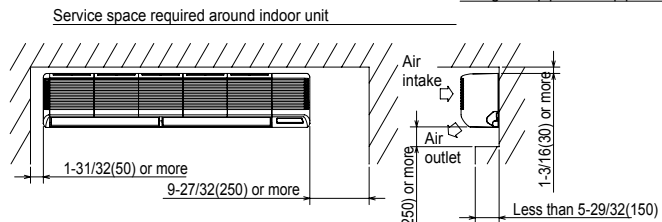
Unit : inch (mm)



MODEL	36
① Liquid pipe	3/8
② Gas pipe	5/8

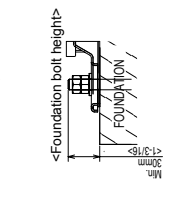
Sleeve *1	Through hole
ø3-17/32 (ø90)	ø3-17/32~ø3-15/16 (ø90~ø100)

*1 Sleeves are available on the market.



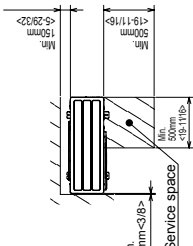
3 FOUNDATION BOLTS

Please secure the unit firmly with 4 foundation (M10- \times W3/8) bolts. Bolts and washers must be purchased locally.



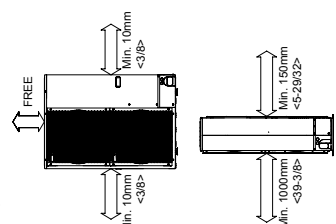
2 SERVICE SPACE

Dimensions of space needed for service access are shown in the below diagram.



1 FREE SPACE (Around the unit)

The diagram below shows a basic example. Explanation of particular details are given in the installation manuals etc.

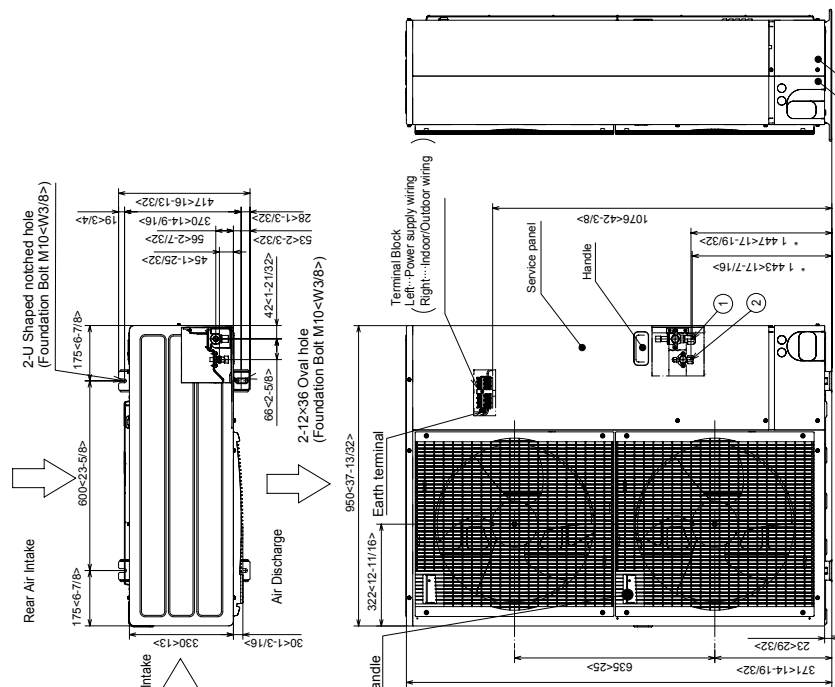


Example of Notes

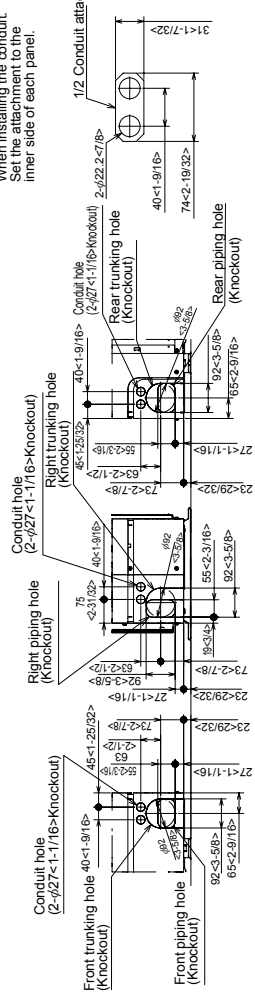
- ①.....Refrigerant GAS pipe connection (FLARE)/ ϕ 15.88- \times 3/8>
- ②.....Refrigerant LIQUID pipe connection (FLARE)/ ϕ 9.52- \times 3/8>
- *1Indication of STOP VALVE connection location.

4 PIPING-WIRING DIRECTIONS

Piping and wiring connections can be made from 4 directions: front, right, rear and below.



Piping Knockout Hole Details



PKA-A18GA PKA-A18GAL

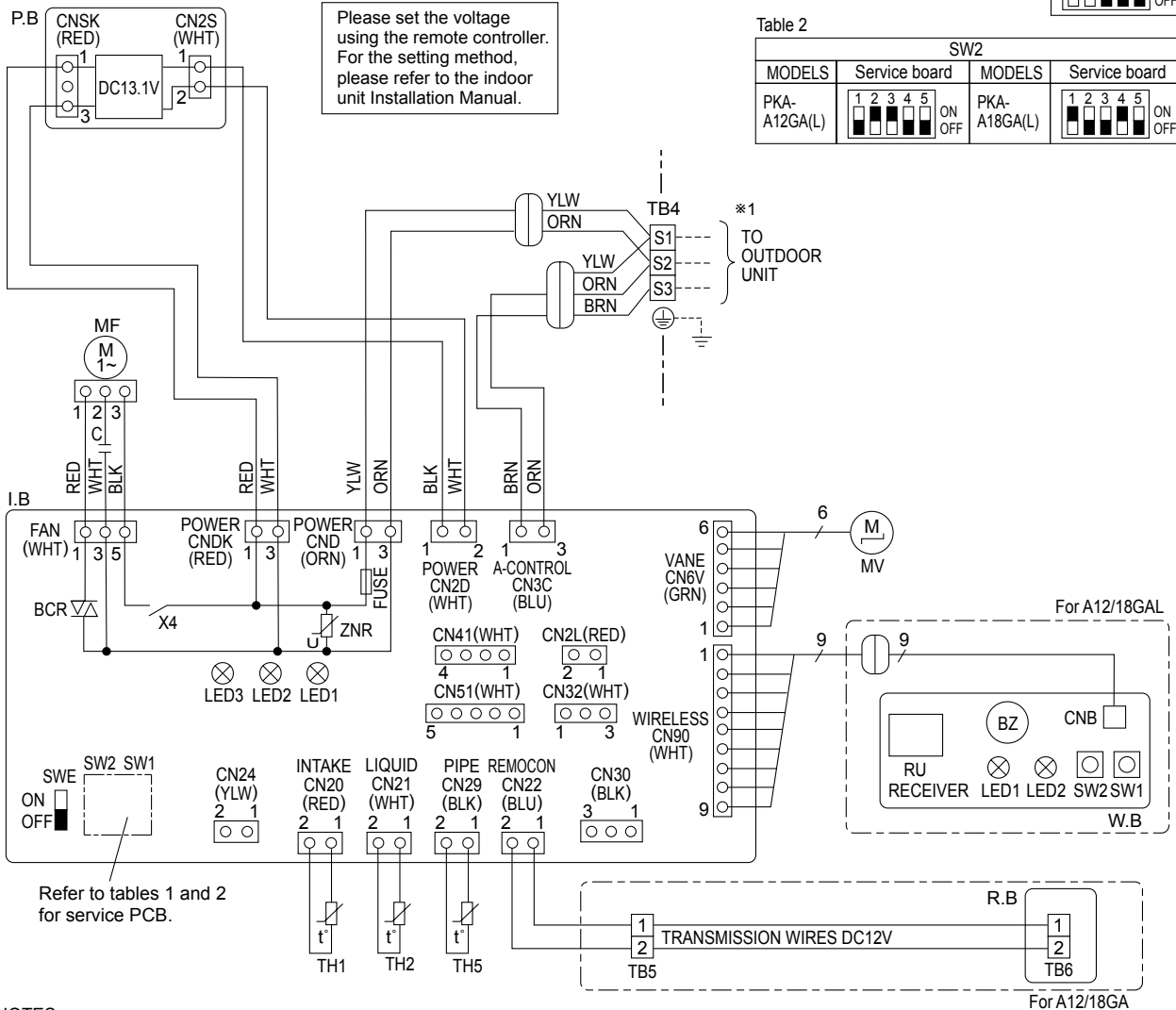
SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
P.B	INDOOR POWER BOARD	LED2	POWER SUPPLY <R.B>	W.B	WIRELESS REMOTE CONTROLLER BOARD
I.B	INDOOR CONTROLLER BOARD	LED3	TRANSMISSION <INDOOR-OUTDOOR>	RU	RECEIVING UNIT
FUSE	FUSE (6.3A/250V)	C	CAPACITOR <FAN MOTOR>	BZ	BUZZER
ZNR	VARISTOR	MF	FAN MOTOR	LED1	LED<RUN INDICATOR >
CN2L	CONNECTOR <LOSSNAY>	MV	VANE MOTOR	LED2	LED<HOT ADJUST>
CN24	CONNECTOR <BACK-UP HEATING>	TB4	TERMINAL BLOCK <INDOOR/OUTDOOR CONNECTING LINE>	SW1	SWITCH<HEATING ON/OFF>
CN30	CONNECTOR <LLC>	TB5, TB6	TERMINAL BLOCK <REMOTE CONTROLLER TRANSMISSION LINE >	SW2	SWITCH<COOLING ON/OFF>
CN32	CONNECTOR <REMOTE SWITCH>	TH1	ROOM TEMP.THERMISTOR <32' F/15kΩ, 77' F/5.2kΩ DETECT>		
CN41	CONNECTOR <HA TERMINAL-A>	TH2	PIPE TEMP.THERMISTOR/LIQUID <32' F/15kΩ, 77' F/5.2kΩ DETECT>		
CN51	CONNECTOR <CENTRALLY CONTROL>	TH5	COND./EVA.TEMP.THERMISTOR <32' F/15kΩ, 77' F/5.2kΩ DETECT>		
SW1	SWITCH <MODEL SELECTION>*See Table 1.	R.B	WIRED REMOTE CONTROLLER BOARD		
SW2	SWITCH <CAPACITY CODE>*See Table 2.				
SWE	SWITCH <EMERGENCY OPERATION>				
X4	RELAY <FAN MOTOR>				
BCR	FAN CONTROL ELEMENT				
LED1	POWER SUPPLY <I.B>				

Table 1

SW1				
Service board				
1	2	3	4	5
ON	OFF	ON	OFF	ON

Table 2

MODELS		SW2					MODELS		SW2								
		Service board							Service board								
PKA-A18GA(L)		1	2	3	4	5	ON	OFF	PKA-A18GA(L)		1	2	3	4	5	ON	OFF



NOTES:

1. Since the outdoor side electric wiring may change, be sure to check the outdoor unit electric wiring for servicing.
 2. Indoor and outdoor connecting wires have polarities, make sure to match terminal numbers (S1, S2, S3) for correct wiring.
 3. Symbols used in wiring diagram above are, : Connector, : Terminal (block).
 4. This diagram shows the wiring of Indoor and Outdoor connecting wires (specification of 230V), adopting superimposed system of power and signal.
- *1. Use copper supply wires.

[Self-diagnosis]
Please refer to technical manuals etc.

PKA-A30FA PKA-A30FAL PKA-A36FA PKA-A36FAL

[LEGEND]

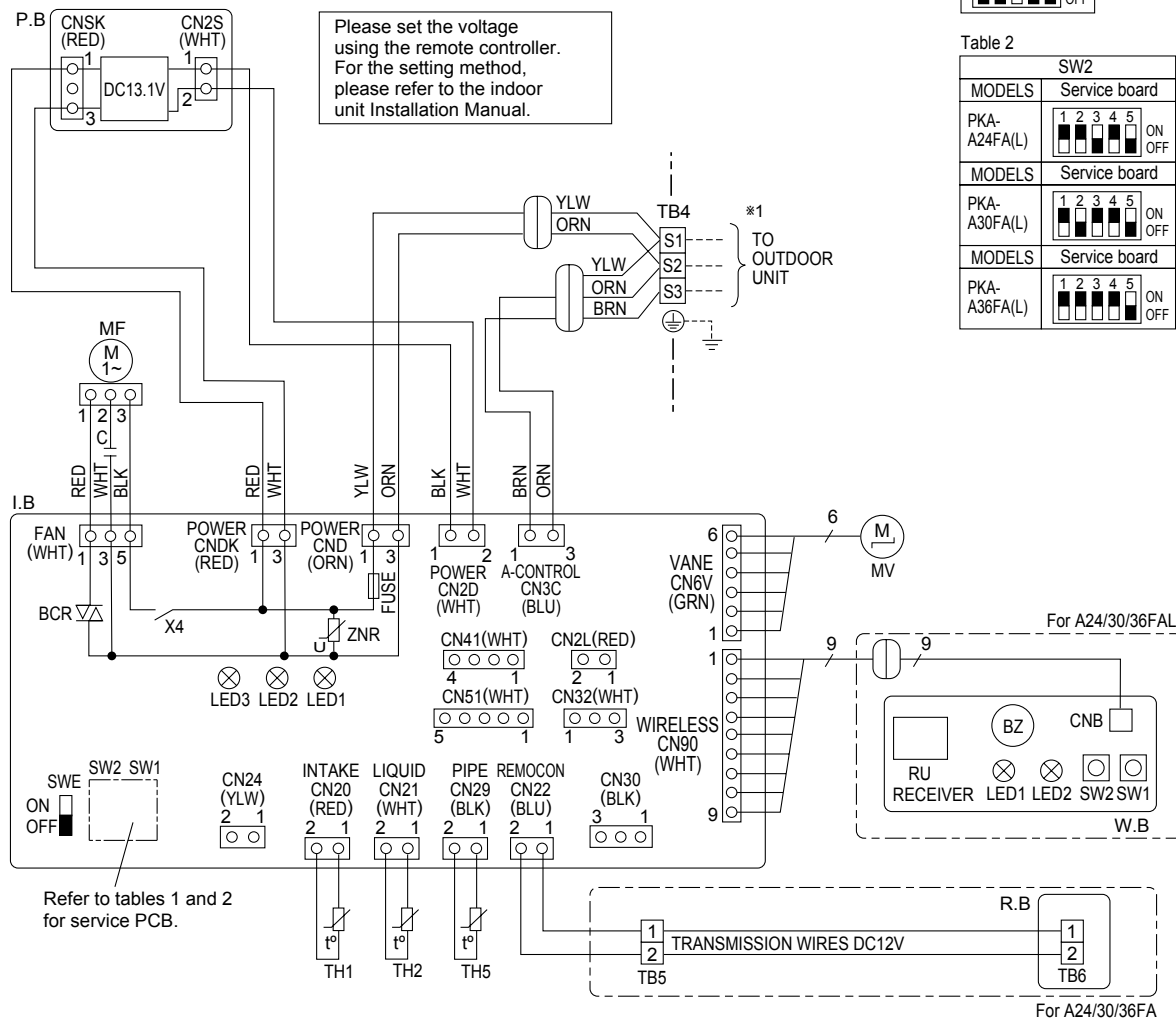
SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
P.B	INDOOR POWER BOARD	LED2	POWER SUPPLY <R.B>	W.B	WIRELESS REMOTE CONTROLLER BOARD
I.B	INDOOR CONTROLLER BOARD	LED3	TRANSMISSION <INDOOR-OUTDOOR>	RU	RECEIVING UNIT
FUSE	FUSE (6.3A/250V)	C	CAPACITOR <FAN MOTOR>	BZ	BUZZER
ZNR	VARISTOR	MF	FAN MOTOR	LED1	LED <RUN INDICATOR >
CN2L	CONNECTOR <LOSSNAY>	MV	VANE MOTOR	LED2	LED <HOT ADJUST>
CN24	CONNECTOR <BACK-UP HEATING>	TB4	TERMINAL BLOCK <INDOOR/OUTDOOR CONNECTING LINE>	SW1	SWITCH <HEATING ON/OFF>
CN30	CONNECTOR <LLC>	TB5,TB6	TERMINAL BLOCK <REMOTE CONTROLLER TRANSMISSION LINE >	SW2	SWITCH <COOLING ON/OFF>
CN32	CONNECTOR <REMOTE SWITCH>	TH1	ROOM TEMP.THERMISTOR <32 F/15kΩ, 77 F/5.2kΩ DETECT>		
CN41	CONNECTOR <HA TERMINAL-A>	TH2	PIPE TEMP.THERMISTOR/LIQUID <32 F/15kΩ, 77 F/5.2kΩ DETECT>		
CN51	CONNECTOR <CENTRALLY CONTROL>	TH5	COND./EVA.TEMP.THERMISTOR <32 F/15kΩ, 77 F/5.2kΩ DETECT>		
SW1	SWITCH <MODEL SELECTION>*See Table 1.	R.B	WIRED REMOTE CONTROLLER BOARD		
SW2	SWITCH <CAPACITY CODE>*See Table 2.				
SWE	SWITCH <EMERGENCY OPERATION>				
X4	RELAY <FAN MOTOR>				
BCR	FAN CONTROL ELEMENT				
LED1	POWER SUPPLY <I.B>				

Table 1

SW1					
Service board					
1	2	3	4	5	ON/OFF
ON	OFF	ON	OFF	ON	OFF

Table 2

SW2													
MODELS	Service board												
PKA-A24FA(L)	<table border="1"> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>ON/OFF</td></tr> <tr><td>ON</td><td>OFF</td><td>ON</td><td>OFF</td><td>ON</td><td>OFF</td></tr> </table>	1	2	3	4	5	ON/OFF	ON	OFF	ON	OFF	ON	OFF
1	2	3	4	5	ON/OFF								
ON	OFF	ON	OFF	ON	OFF								
PKA-A30FA(L)	<table border="1"> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>ON/OFF</td></tr> <tr><td>ON</td><td>OFF</td><td>ON</td><td>OFF</td><td>ON</td><td>OFF</td></tr> </table>	1	2	3	4	5	ON/OFF	ON	OFF	ON	OFF	ON	OFF
1	2	3	4	5	ON/OFF								
ON	OFF	ON	OFF	ON	OFF								
PKA-A36FA(L)	<table border="1"> <tr><td>1</td><td>2</td><td>3</td><td>4</td><td>5</td><td>ON/OFF</td></tr> <tr><td>ON</td><td>OFF</td><td>ON</td><td>OFF</td><td>ON</td><td>OFF</td></tr> </table>	1	2	3	4	5	ON/OFF	ON	OFF	ON	OFF	ON	OFF
1	2	3	4	5	ON/OFF								
ON	OFF	ON	OFF	ON	OFF								



Notes:

1. Symbols used in wiring diagram above are, : Connector, : Terminal block.
2. Indoor and outdoor connecting wires have polarities, make sure to match terminal numbers (S1, S2, S3) for correct wiring.
3. Since the outdoor side electric wiring may change, be sure to check the outdoor unit electric wiring for servicing.
4. This diagram shows the wiring of Indoor and Outdoor connecting wires (specification of 230V), adopting superimposed system of power and signal.

*1. Use copper supply wires.

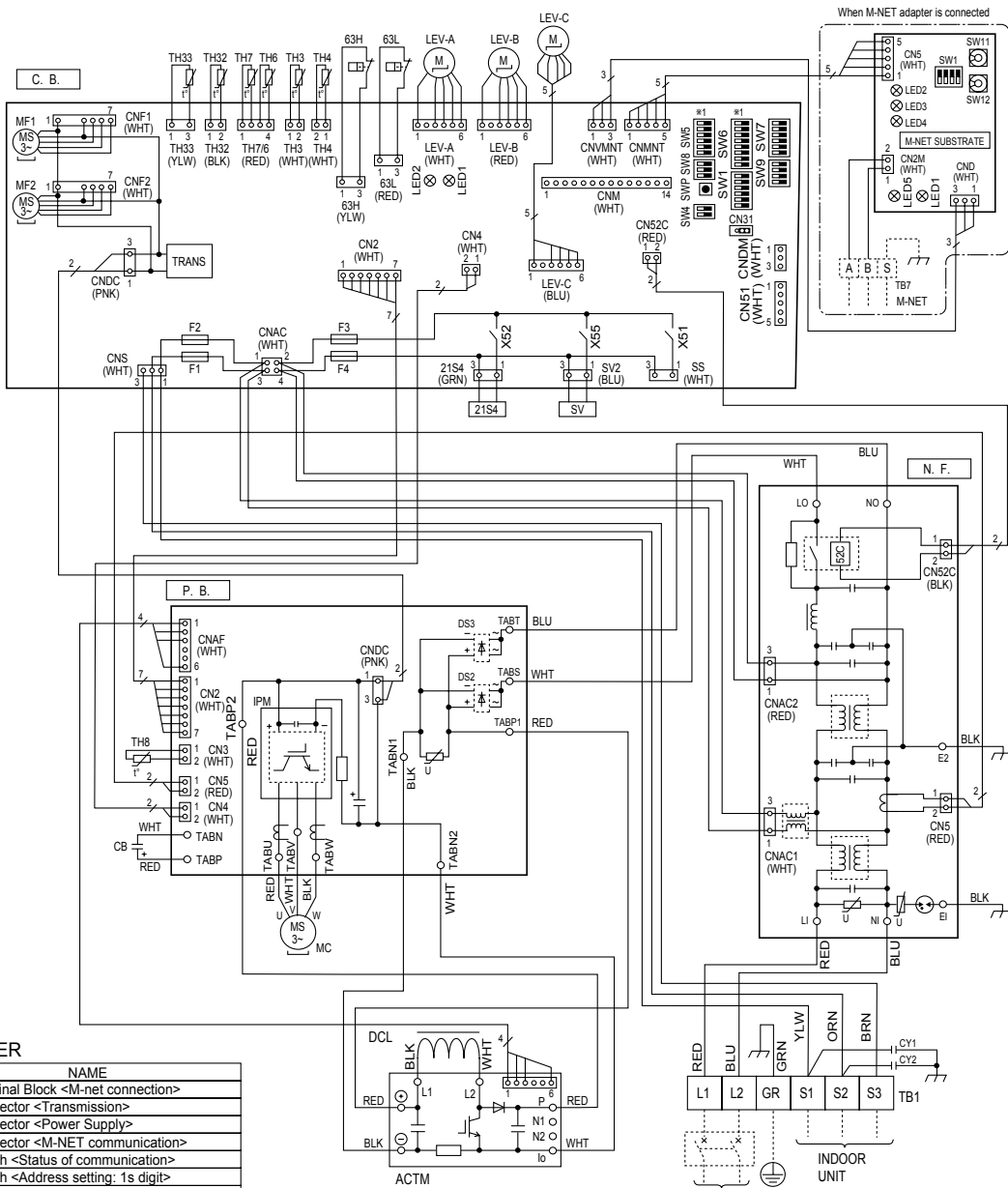
[Self-diagnosis]

Please refer to technical manuals etc.

PUZ-HA30NHA PUZ-HA36NHA

[LEGEND]

SYMBOL	NAME	SYMBOL	NAME	SYMBOL	NAME
TB1	Terminal Block<Power Supply, Indoor/Outdoor >	P. B.	Power Circuit Board	SW6	Switch <Model Select>
MC	Motor for Compressor	TABU/V/W	Connection Terminal <U/V/W-Phase>	SW7	Switch <Function Setup>
MF1, MF2	Fan Motor	TABS/T	Connection Terminal <L/N-Phase>	SW8	Switch <Function Setup>
21S4	Solenoid Valve (Four-Way Valve)	TABP1/P2/P	Connection Terminal <DC Voltage>	SW9	Switch
63H	High Pressure Switch	TABN1/N2/N	Connection Terminal <DC Voltage>	SWP	Switch <Pump Down>
63L	Low Pressure Switch	DS2, DS3	Diode Bridge	CN31	Connector <Emergency Operation>
SV	Solenoid Valve (Bypass Valve)	IPM	Power Module	SS	Connector <Connection for Option>
TH3, TH32, TH33	Thermistor <Outdoor Pipe>	N. F.	Noise Filter Circuit Board	CNM	Connector <A-Control Service Inspection Kit>
TH4	Thermistor <Discharge>	LI/LO	Connection Terminal <-L-Phase>	CNMNT	Connector <Connected to Optional M-NET Adapter Board>
TH6	Thermistor <Outdoor 2-Phase Pipe>	NI/NO	Connection Terminal <-N-Phase>	CNMVMT	Connector <Connected to Optional M-NET Adapter Board>
TH7	Thermistor <Outdoor>	E1, E2	Connection Terminal <Ground>	CNDM	Connector < Connected for Option (Contact Input)>
TH8	Thermistor <Heatsink>	52C	52C Relay	LED1, LED2	LED <Operation Inspection Indicators>
LEV-A, LEV-B, LEV-C	Electronic Expansion Valve	C. B.	Controller Circuit Board	F1-F4	Fuse < T6.3AL250V>
DCL	Reactor	SW1	Switch <Forced Defrost, Defect History Record Reset, Refrigerant Address>	X51, X52, X55	Relay
ACTM	Active Filter Module	SW4	Switch <Test Operation>		
CB	Main Smoothing Capacitor	SW5	Switch <Function Switch>		
CY1, CY2	Capacitor				



M-NET ADAPTER

SYMBOL	NAME
TB7	Terminal Block <M-net connection>
CN5	Connector <Transmission>
CND	Connector <Power Supply>
CN2M	Connector <M-NET communication>
SW1	Switch <Status of communication>
SW11	Switch <Address setting: 1s digit>
SW12	Switch <Address setting: 10ths digit>
LED1	LED <Power Supply: DC5V>
LED2	LED <Connection to Outdoor Unit>
LED3	LED <Transmission: Sending>
LED4	LED <Transmission: Receiving>
LED5	LED <Power Supply: DC12V>

*1MODEL SELECT

MODEL	SW6	SW5-6 *2
30N	ON OFF [1 2 3 4 5 6 7 8]	ON OFF [1 2 3 4 5 6]
36N	ON OFF [1 2 3 4 5 6 7 8]	ON OFF [1 2 3 4 5 6]

POWER SUPPLY
~N 208/230V 60Hz

*Use copper supply wires.

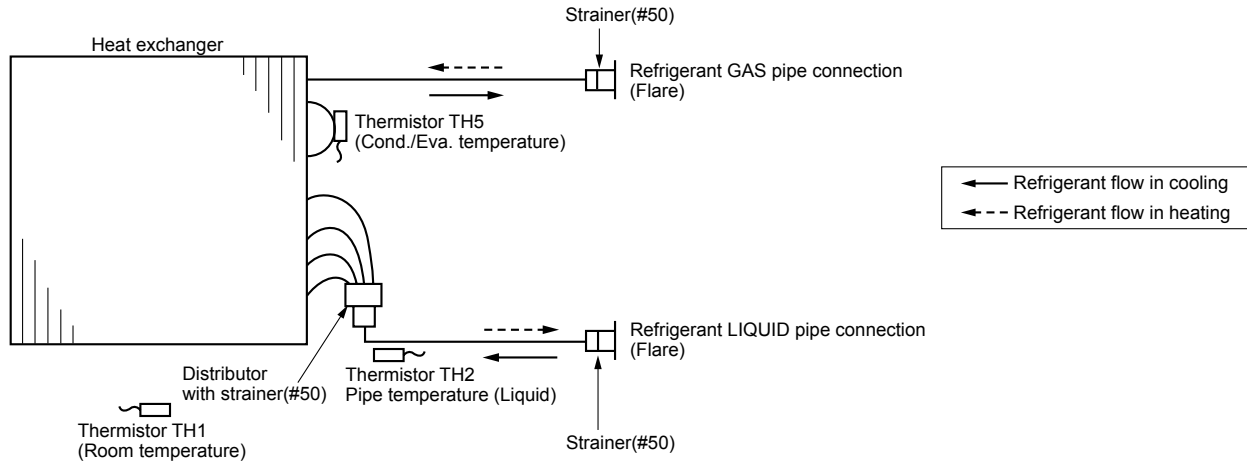
*2. SW5 - 1 to 5: Function Switch

5

REFRIGERANT SYSTEM DIAGRAM

5-1. INDOOR UNIT

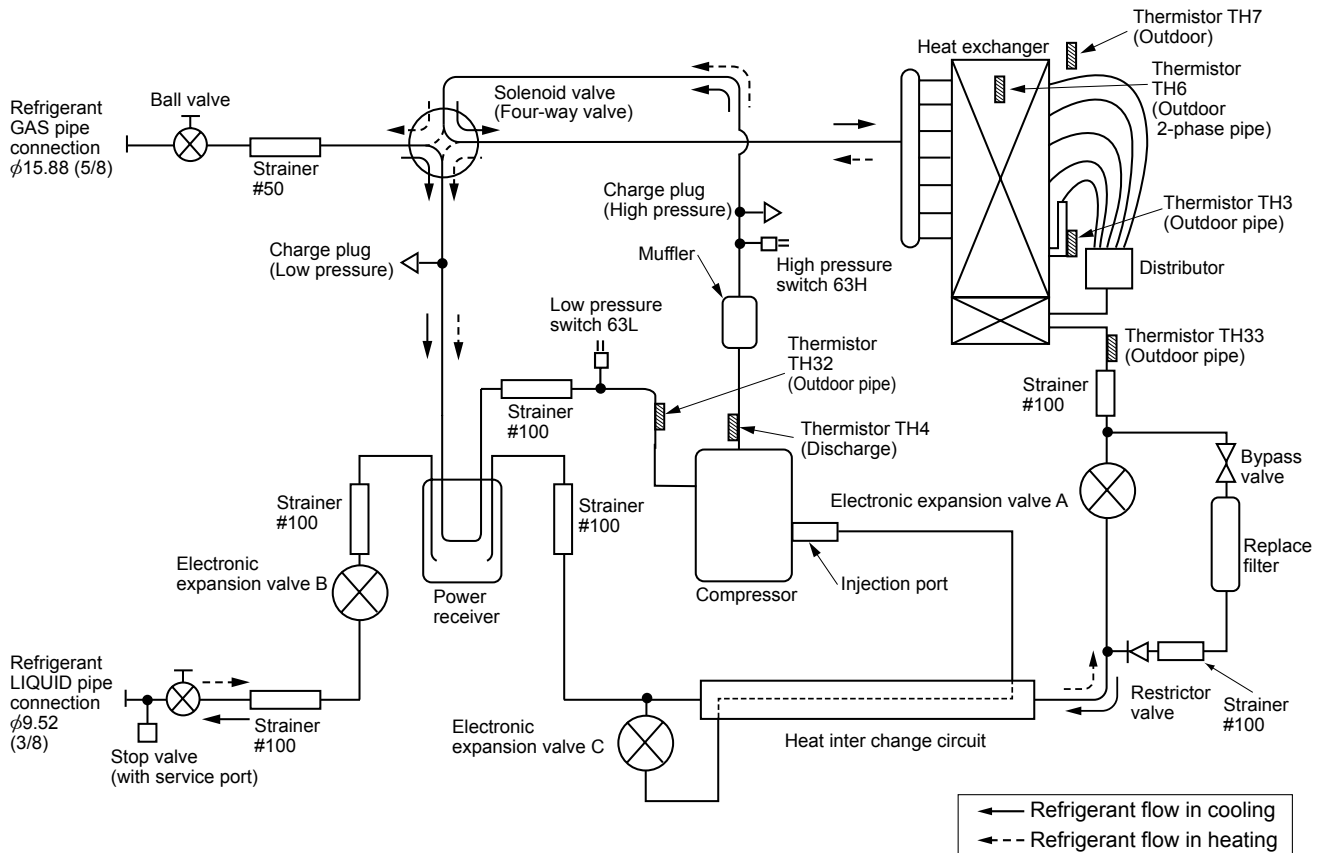
PLA-A-BA PKA-A-GA PKA-A-GAL PKA-A-FA PKA-A-FAL



5-2. OUTDOOR UNIT

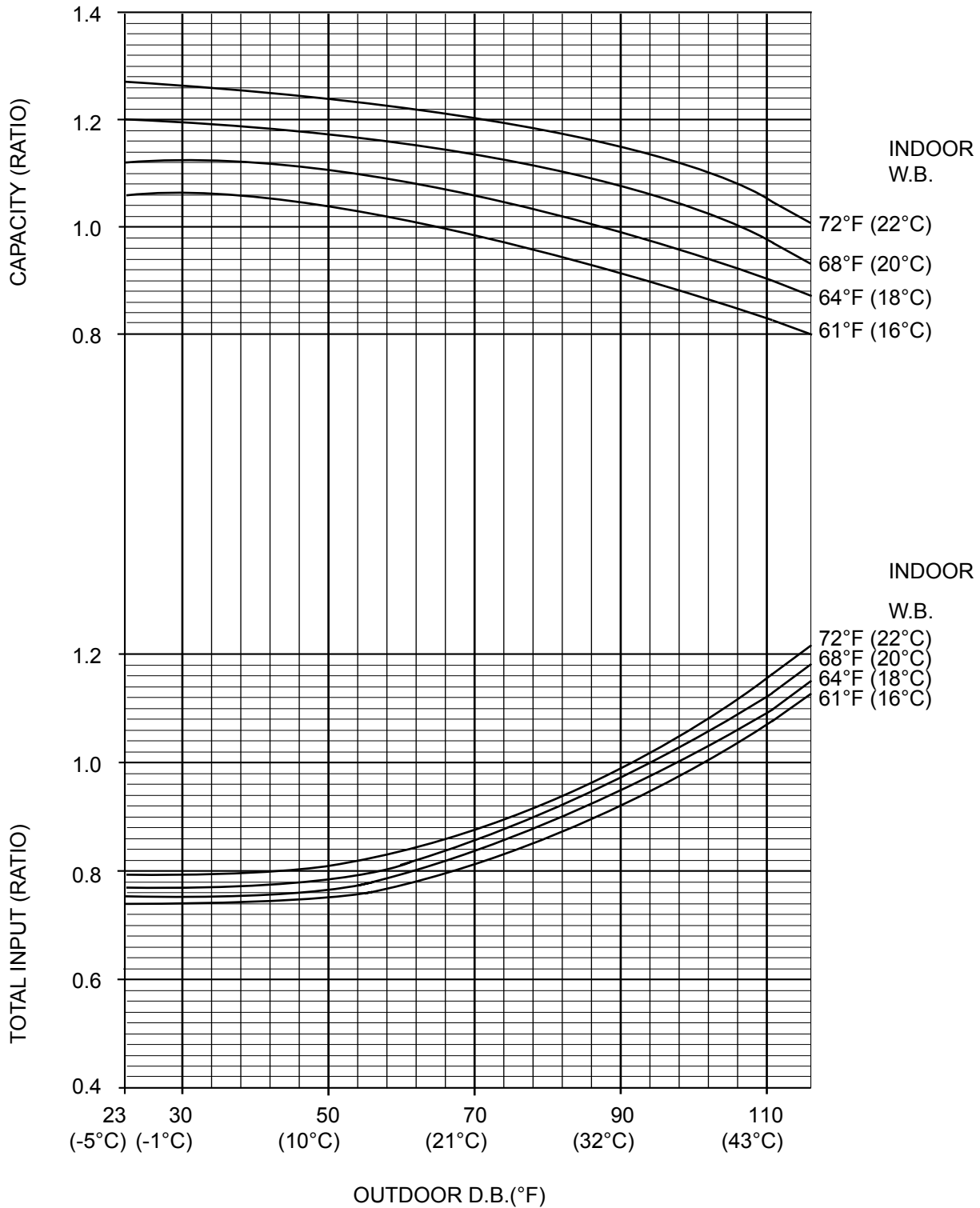
PUZ-HA30NHA PUZ-HA36NHA

unit : mm (inch)



FOR THE COMBINATION OF OUTDOOR UNIT PUZ-HA-NHA

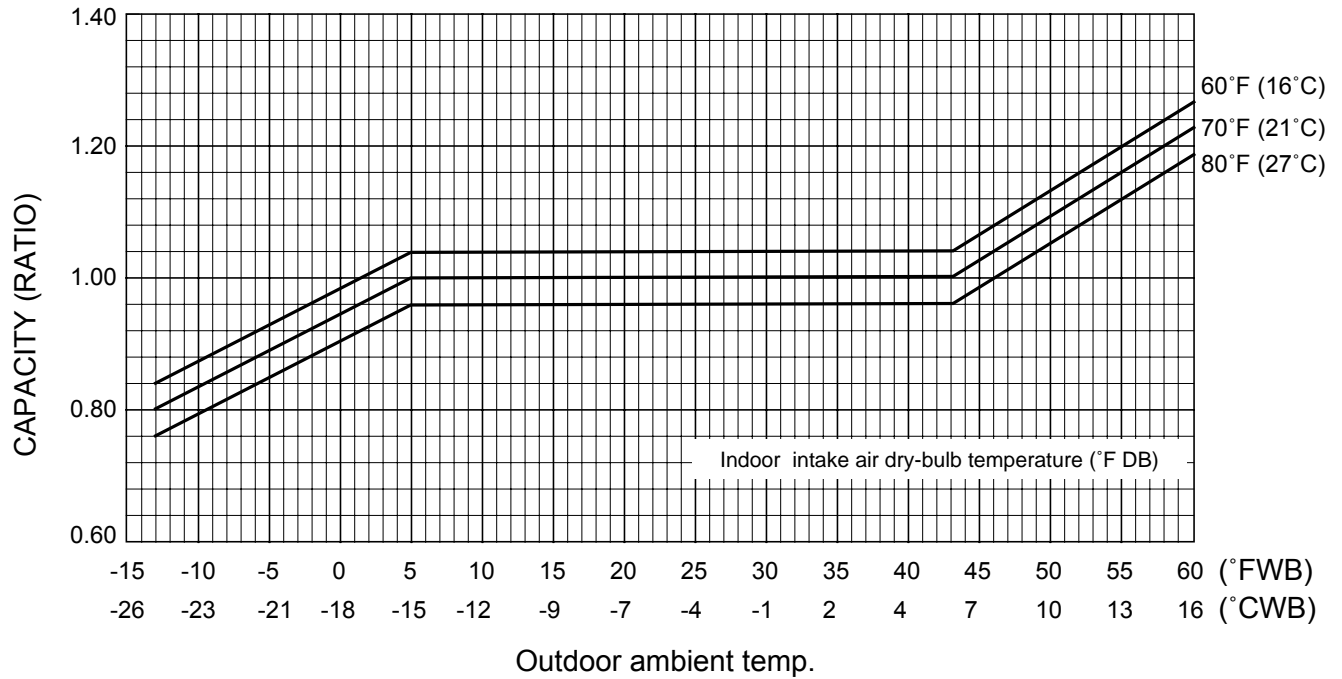
Cooling performance curve



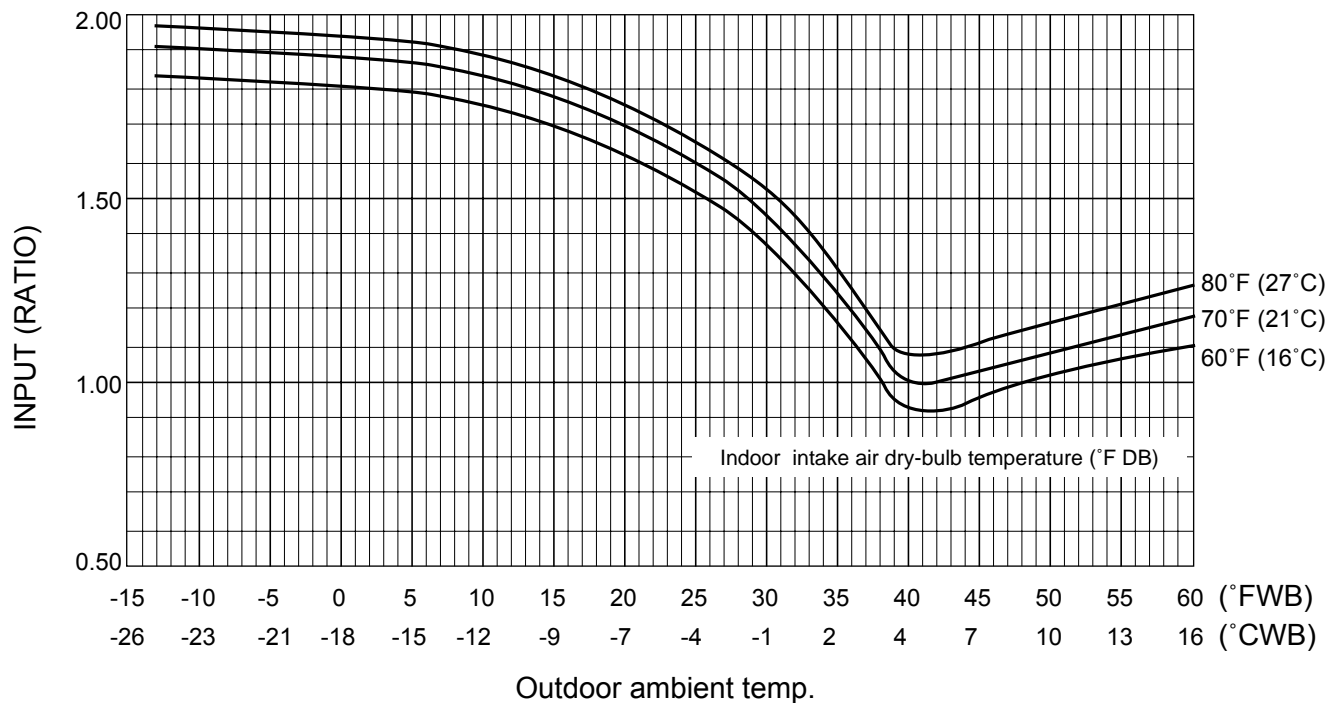
Note : This diagram shows the case where the operation frequency of a compressor is fixed.

Rated heating performance curve

Rated heating capacity



Heating input



7

CORRECTION FACTORS

7-1. COOLING CAPACITY CORRECTION FACTORS

Outdoor unit	Refrigerant piping length (one way)									
	5m (16ft)	10m (33ft)	20m (70ft)	30m (100ft)	40m (130ft)	50m (165ft)	55m (180ft)	60m (195ft)	70m (230ft)	80m (260ft)
PUZ-HA30NHA PUZ-HA36NHA	1.00	0.985	0.957	0.931	0.908	0.886	0.876	0.865	0.846	0.829

7-2. HEATING CAPACITY CORRECTION FACTORS

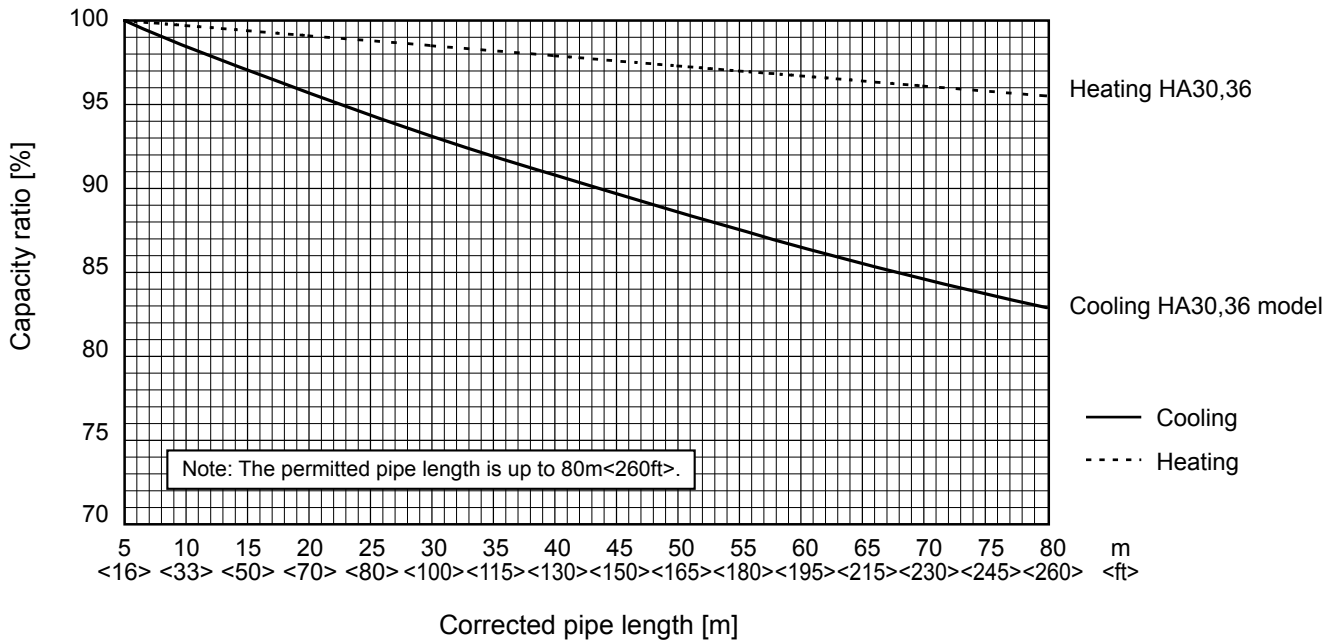
Outdoor unit	Refrigerant piping length (one way)									
	5m (16ft)	10m (33ft)	20m (70ft)	30m (100ft)	40m (130ft)	50m (165ft)	55m (180ft)	60m (195ft)	70m (230ft)	80m (260ft)
PUZ-HA30NHA PUZ-HA36NHA	1.00	0.997	0.991	0.985	0.979	0.973	0.970	0.967	0.961	0.955

7-3. CAPACITY CORRECTION

Cooling and heating capacity is lowered according to pipe length. Capacity can be obtained by referring to the capacity curves below.

Corrected pipe length (m) = actual pipe length (m) + number of bends x 0.3 (m)

Corrected pipe length (ft) = actual pipe length (ft) + number of bends x 1 (ft)



When gas pipe is one size larger than standard size, capacity can be obtained by referring to capacity curves of standard size.

7-4. ADDITION OF REFRIGERANT

- Additional charging is not necessary if the pipe length does not exceed 30 m (100 ft).
- If the pipe length exceeds the specified length above, charge the unit with additional R410A refrigerant according to the permitted pipe lengths in the chart below.
 - * When the unit is stopped, charge the unit with the additional refrigerant through the liquid stop valve after the pipe extensions and indoor unit have been vacuumized.
 - * When the unit is operating, add refrigerant to the gas check valve using a safety charger. Do not add liquid refrigerant directly to the check valve.
 - * After charging the unit with refrigerant, note the added refrigerant amount on the service label (attached to the unit).
- Be careful when installing multiple units. Connecting to an incorrect indoor unit can lead to abnormally high pressure and have a serious effect on operation performance.

Model	Max. pipe length	Max. height difference	Additional refrigerant charging amount															
			30 m 100 ft	33 m 110 ft	37 m 120 ft	40 m 130 ft	43 m 140 ft	46 m 150 ft	49 m 160 ft	52 m 170 ft	55 m 180 ft	58 m 190 ft	61 m 200 ft	64 m 210 ft	67 m 220 ft	70 m 230 ft	73 m 240 ft	75 m 245 ft
HA30,36	75 m 245 ft	30 m 100 ft	0 oz 0 kg	6 oz 0.2 kg	12 oz 0.4 kg	18 oz 0.5 kg	24 oz 0.7 kg	30 oz 0.9 kg	36 oz 1.0 kg	42 oz 1.2 kg	48 oz 1.4 kg	54 oz 1.5 kg	60 oz 1.7 kg	66 oz 1.9 kg	72 oz 2.0 kg	78 oz 2.2 kg	84 oz 2.3 kg	86 oz 2.4 kg

8-1. OUTLET AIR SPEED AND COVERAGE RANGE

		PLA-A18BA	PLA-A30BA	PLA-A36BA
Airflow	CFM	640	740	1060
Air speed	ft/sec.(m/sec.)	10.5 (3.2)	12.1 (3.7)	17.4 (5.3)
Coverage range	ft (m)	15 (4.8)	18 (5.6)	26 (8.0)

		PKA-A18GA PKA-A18GAL
Airflow	CFM	425
Air speed	ft/sec.(m/sec.)	17.4 (5.3)
Coverage range	ft (m)	33 (10)

		PKA-A30FA PKA-A30FAL	PKA-A36FA PKA-A36FAL
Airflow	CFM	705	990
Air speed	ft/sec.(m/sec.)	16.1 (4.9)	17.7 (5.4)
Coverage range	ft (m)	41 (12.4)	50 (15.3)

The air coverage range is the distance to which the 0.8 ft/sec. air can reach, when air is blown out horizontally from the unit at the High notch position.

The coverage range should be used only as a general guideline since it varies according to the size of the room and the furniture inside the room.

8-2. PLA-A-BA

8-2-1 FRESH AIR INTAKE AND BRANCH DUCT

1. Branch duct hole and fresh air intake hole (Fig. 1)

At the time of installation, use the duct holes (cut out) located at the positions shown in Fig.1, as and when required.
 • A fresh air intake hole for the optional multi function casement can also be made.

Note:

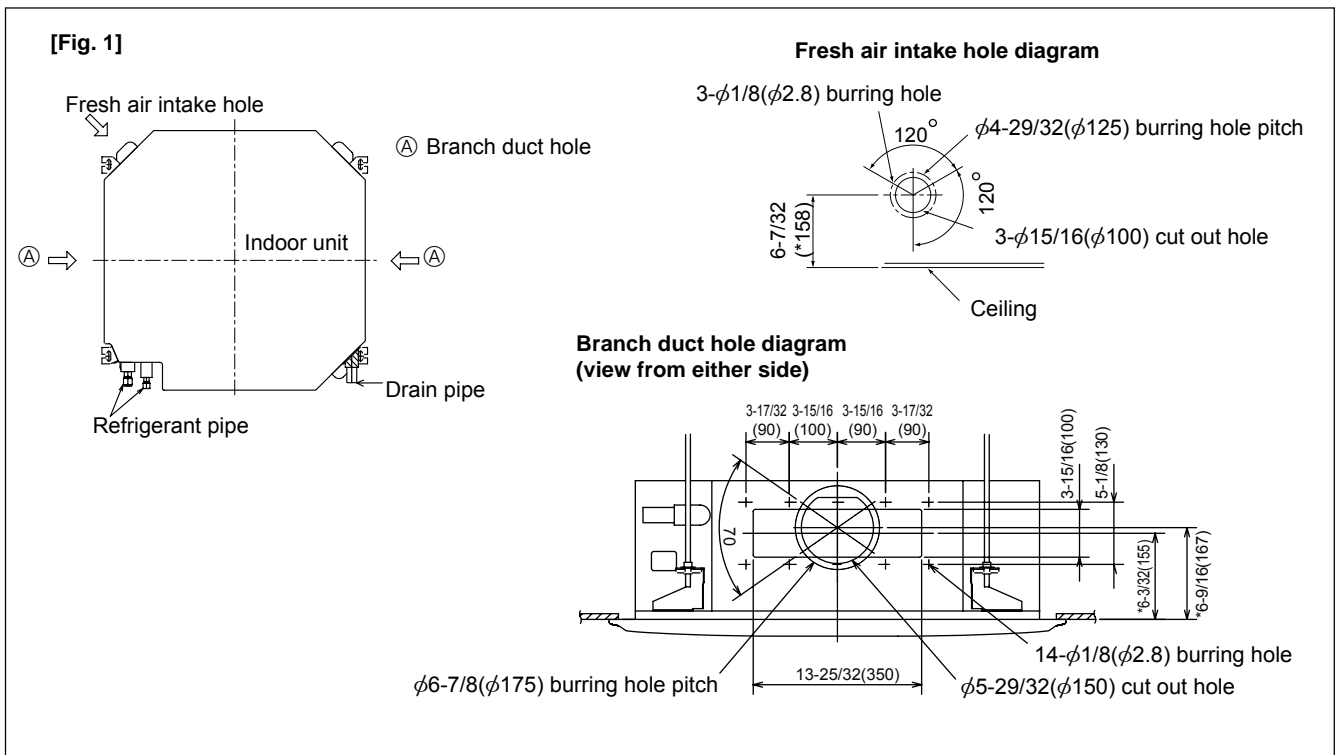
The figure marked with * in the drawing represent the dimensions of the main unit excluding those of the optional multi function casement.

When installing the optional multi function casement, add 5-5/16 to the dimensions marked on the figure.

When installing the branch ducts, be sure to insulate adequately.

Otherwise condensation and dripping may occur.

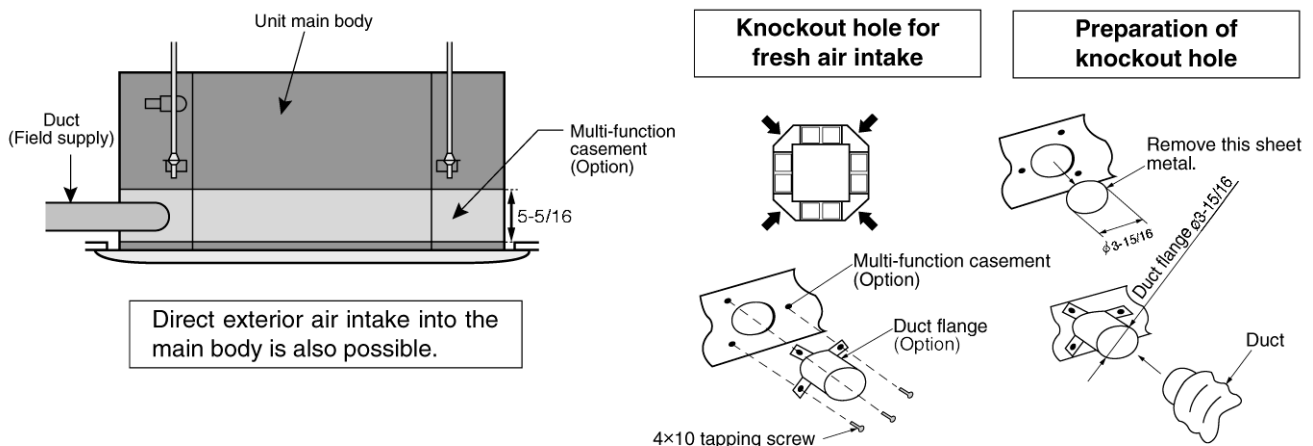
Unit : inch(mm)



2. Fresh air intake (Installation at site)

By mounting the optional multi-function casement to the indoor unit main body, and mounting the duct flange (option) onto it further, fresh exterior air intake can be accomplished.

(The mounting of the multi-function casement increases the height of the ceiling plenum by 5-5/16 (135mm).)

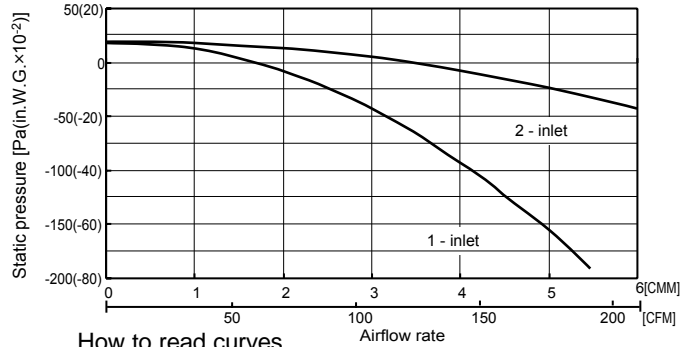
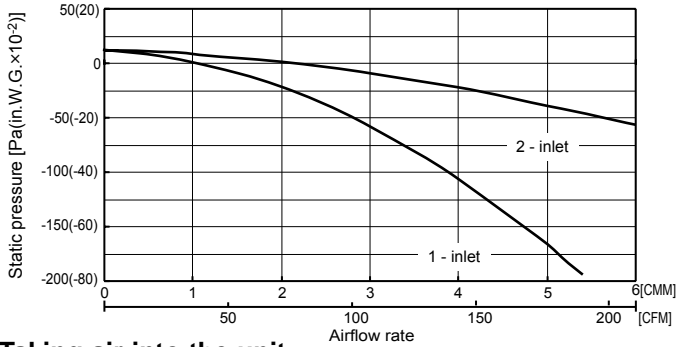


3. Fresh air intake amount & static pressure characteristics

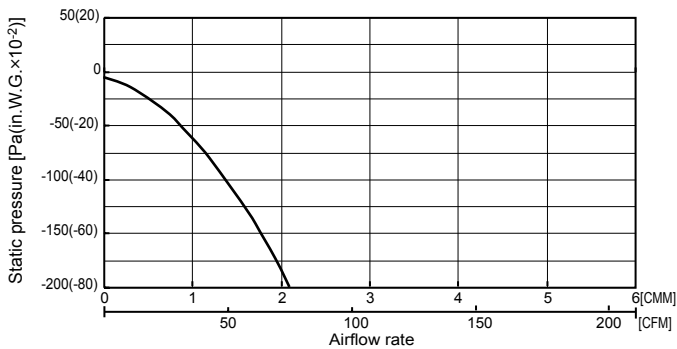
1 PLA-A18BA PLA-A30BA

Multifunction casement + High efficiency filter

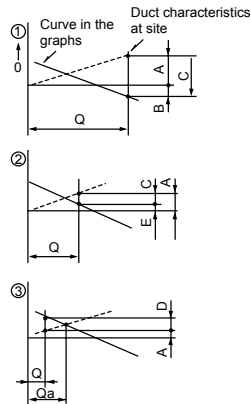
Multifunction casement + Standard filter



Taking air into the unit



How to read curves

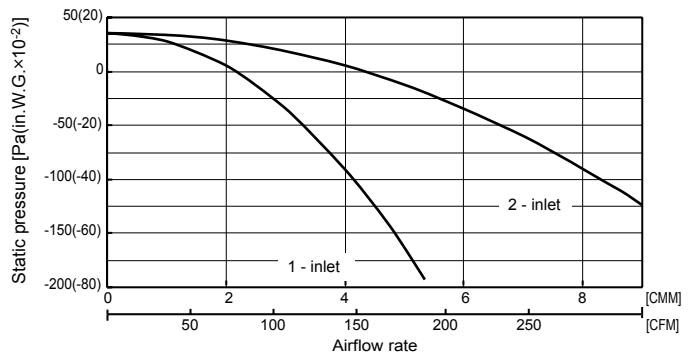
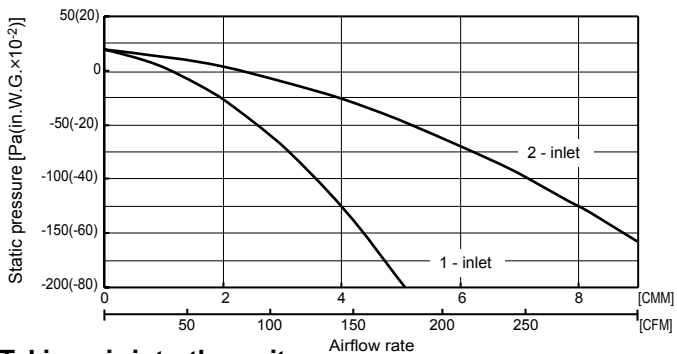


- Q...Designed amount of fresh air intake <CMM(CFM)>
- A...Static pressure loss of fresh air intake duct system with airflow amount Q <Pa(in.W.G.×10⁻²)>
- B...Forced static pressure at air conditioner inlet with airflow amount Q <Pa(in.W.G.×10⁻²)>
- C...Static pressure of booster fan with airflow amount Q <Pa(in.W.G.×10⁻²)>
- D...Static pressure loss increase amount of fresh air intake duct system for airflow amount Q <Pa(in.W.G.×10⁻²)>
- E...Static pressure of indoor unit with airflow amount Q <Pa(in.W.G.×10⁻²)>
- Qa...Estimated amount of fresh air intake without D <CMM(CFM)>

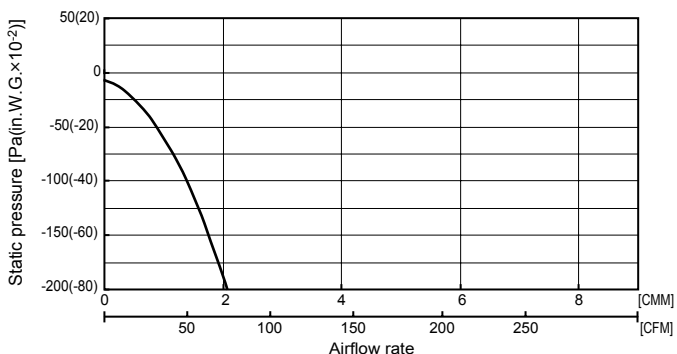
2 PLA-A36BA

Multifunction casement + Standard filter

Multifunction casement + High efficiency filter



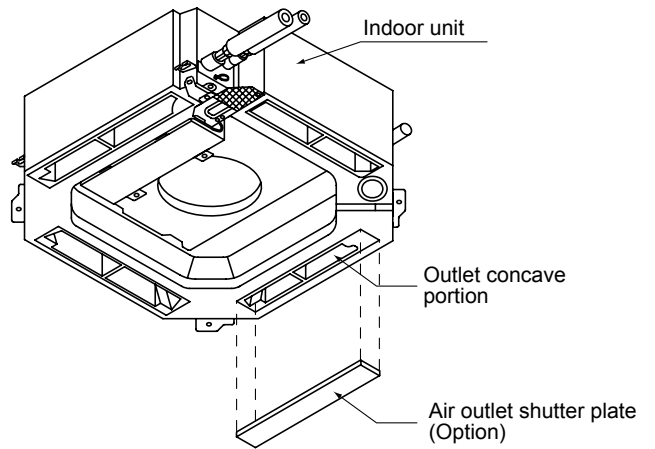
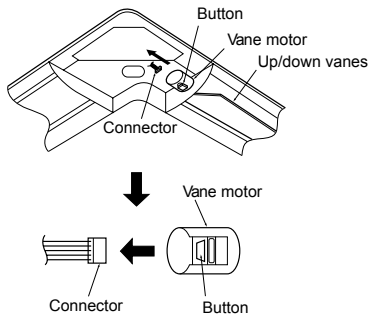
Taking air into the unit



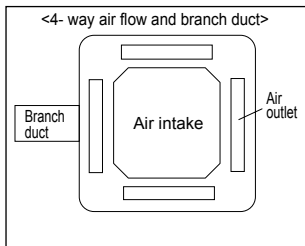
4. Change of outlet numbers

The optional air outlet is necessary. To change the air outlet number to 3-, or 2-way outlet, the outlet number should be closed with the operational air outlet shutter.

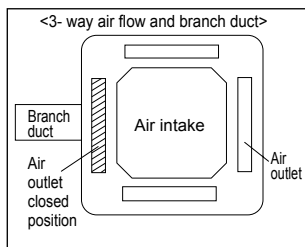
When the air outlets are closed, close the vane by removing the vane connector.



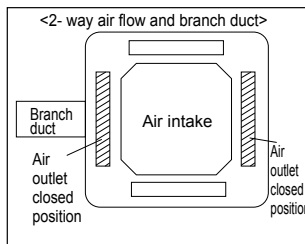
5. Branch duct and change of outlet numbers



※ Branch duct should be connected to one of the branch duct holes on the main unit.

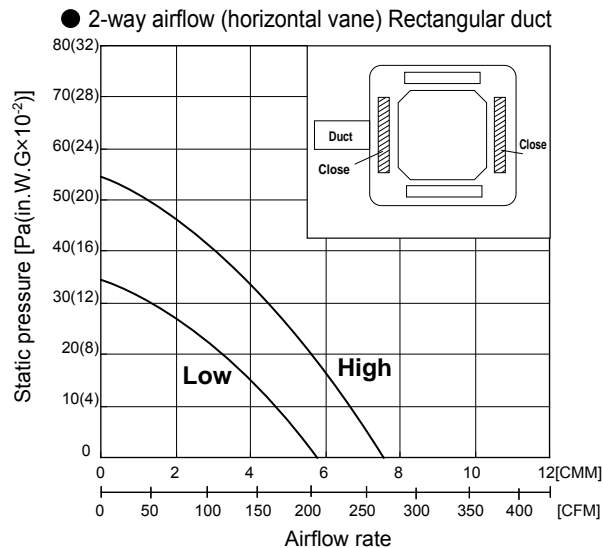
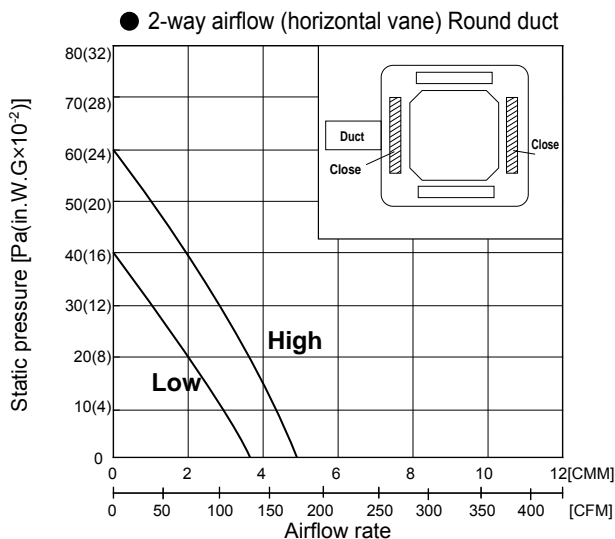
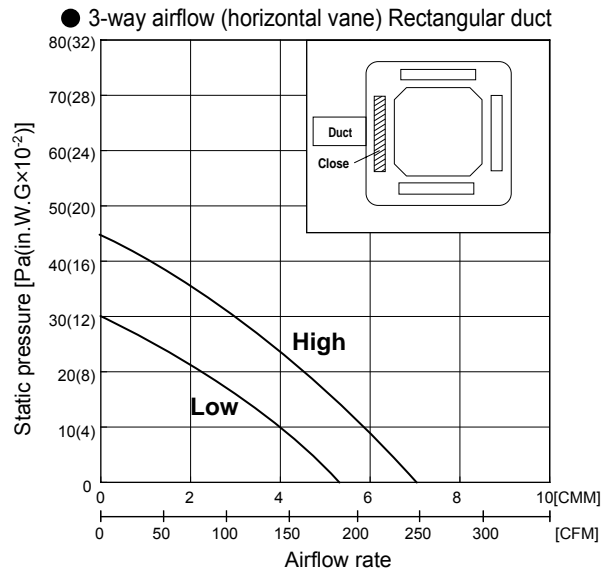
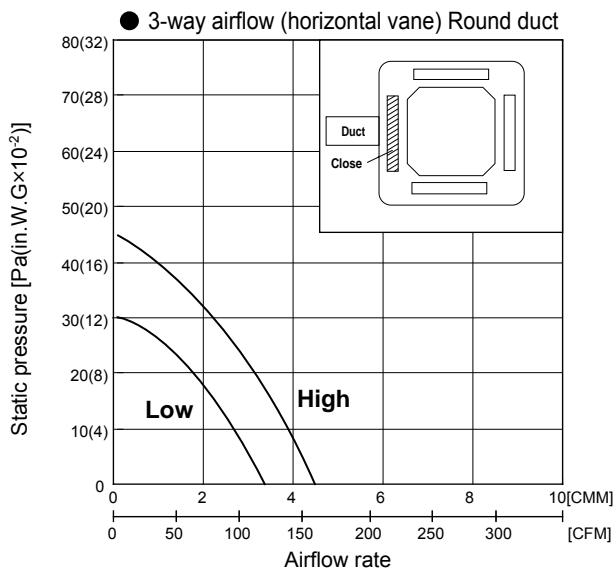
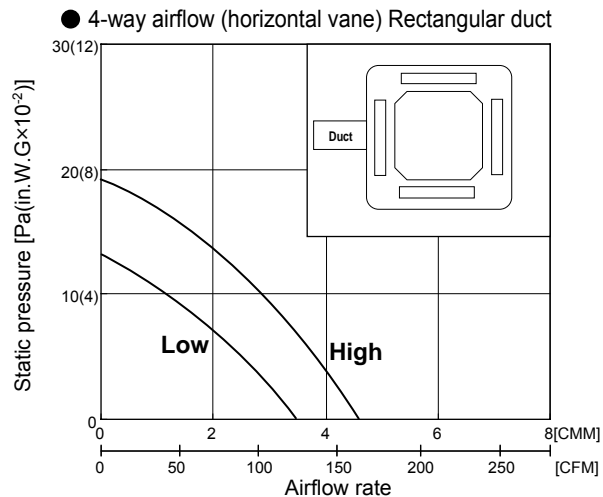
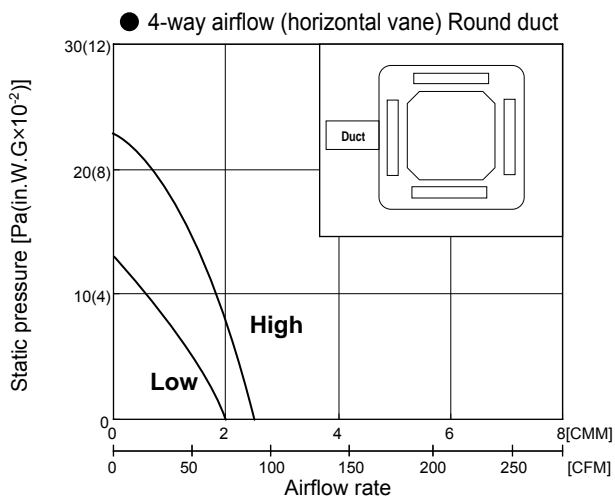


※ Close the outlet on the side of branch duct and air flows in 3 directions.



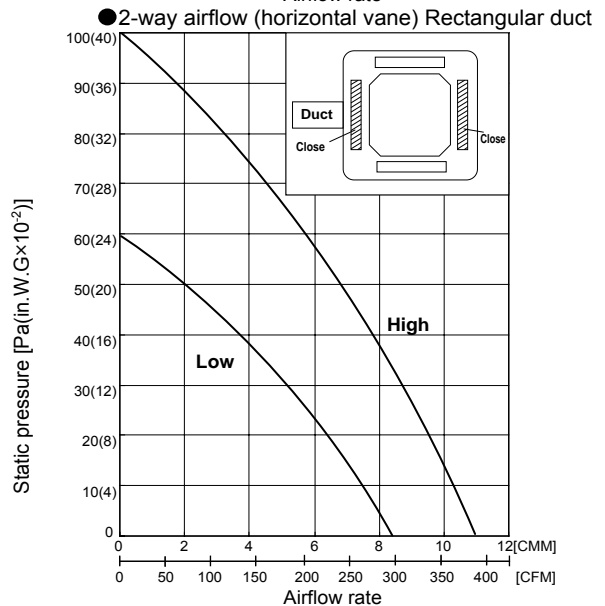
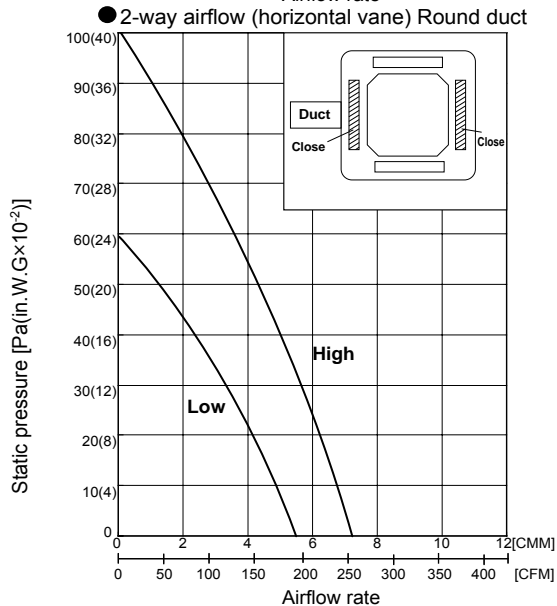
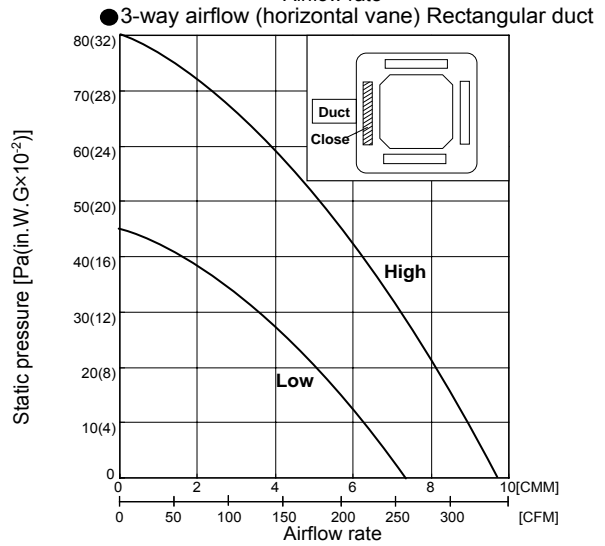
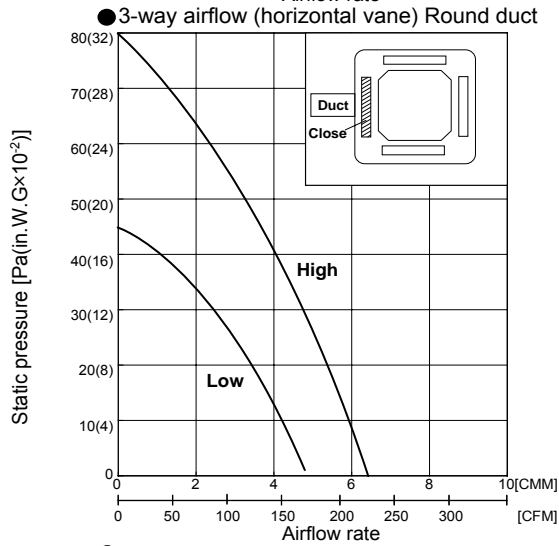
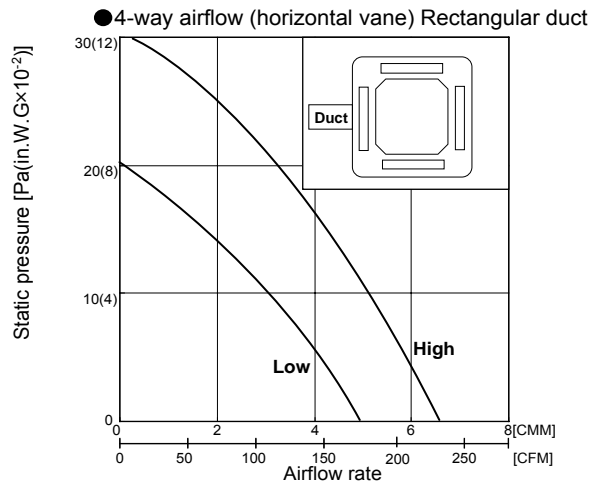
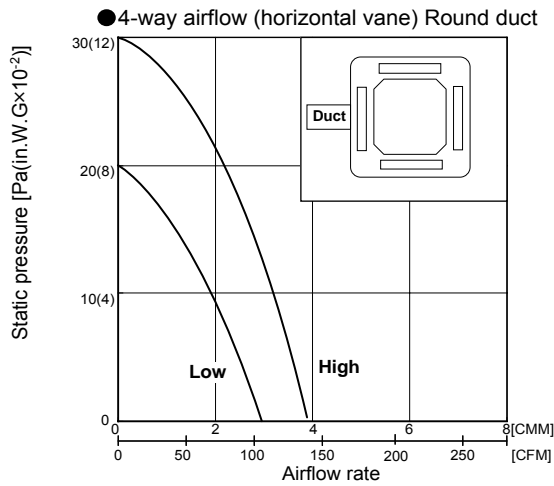
※ The outlet on the side of branch duct and one of the other outlets are closed. Air flows in 2 directions.

- Airflow rate of PLA-A18BA can be calculated from the airflow rate based on the characteristic of the duct for PLA-A30BA.
- PLA-A30BA**



- Use 1 of the 2 duct holes on the indoor unit.
- Use the optional air outlet shutter plate (PAC-SH51SP-E) for 3-way and 2-way airflow.

- Airflow rate of PLA-A36BA can be calculated from the airflow rate based on the characteristic of the duct for PLA-A42BA.
- PLA-A42BA**



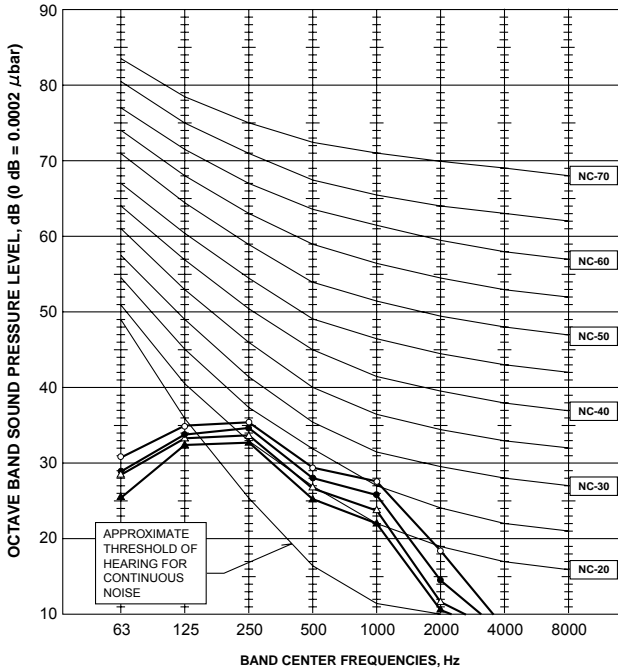
- Use 1 of the 2 duct holes on the indoor unit.
- Use the optional air outlet shutter plate (PAC-SH51SP-E) for 3-way and 2-way airflow.

9

NOISE CRITERION CURVES

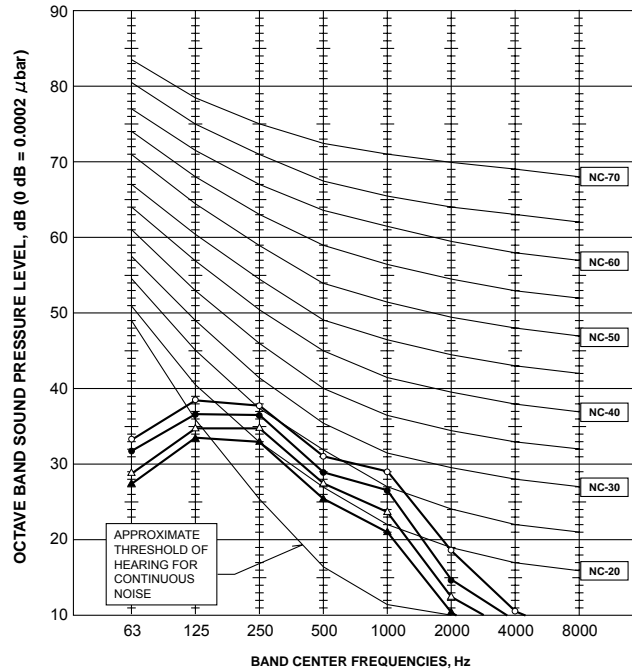
9-1. INDOOR UNIT PLA-A18BA

NOTCH	SPL(dB)	LINE
High	32	○—○
Medium1	31	●—●
Medium2	29	△—△
Low	28	▲—▲



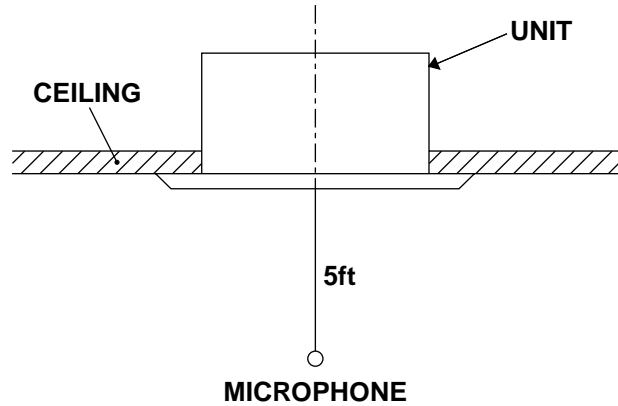
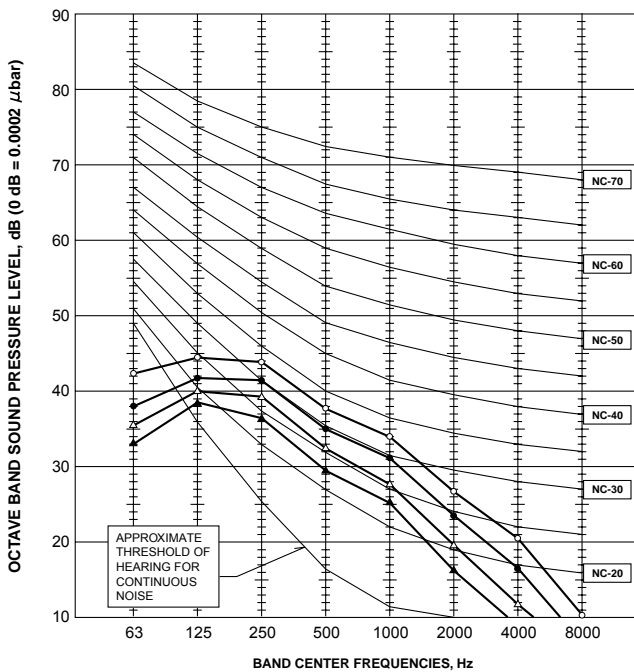
PLA-A30BA

NOTCH	SPL(dB)	LINE
High	34	○—○
Medium1	32	●—●
Medium2	30	△—△
Low	28	▲—▲



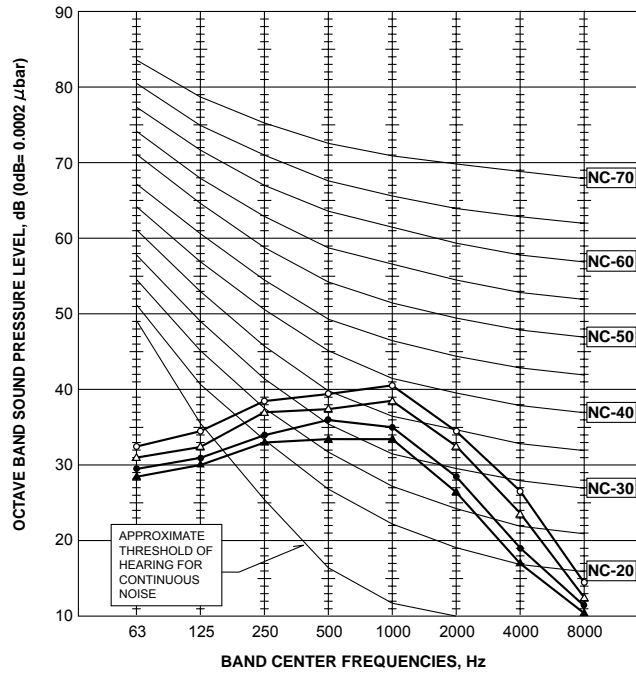
PLA-A36BA

NOTCH	SPL(dB)	LINE
High	40	○—○
Medium1	37	●—●
Medium2	34	△—△
Low	32	▲—▲



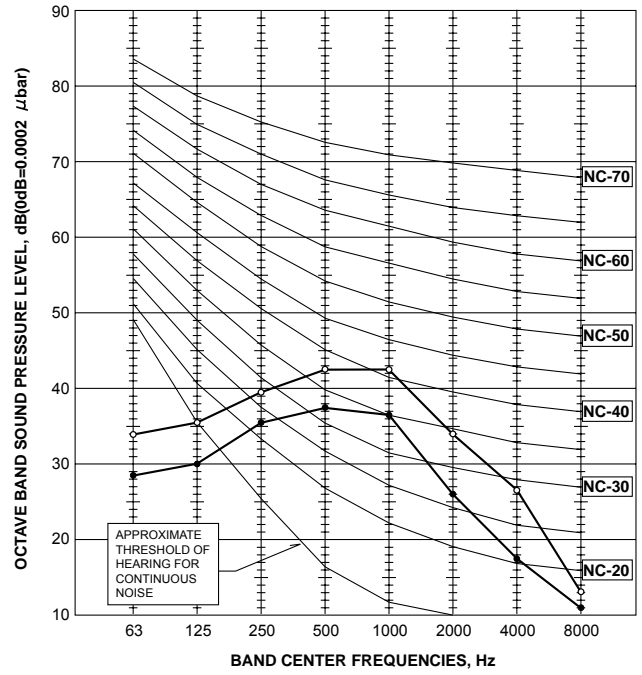
**PKA-A18GA
PKA-A18GAL**

NOTCH	SPL(dB)	LINE
High	43	○—○
Medium1	41	△—△
Medium2	38	●—●
Low	36	▲—▲



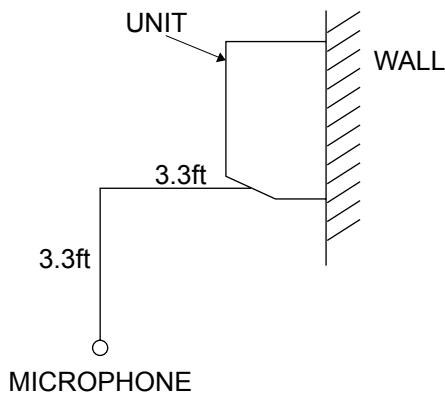
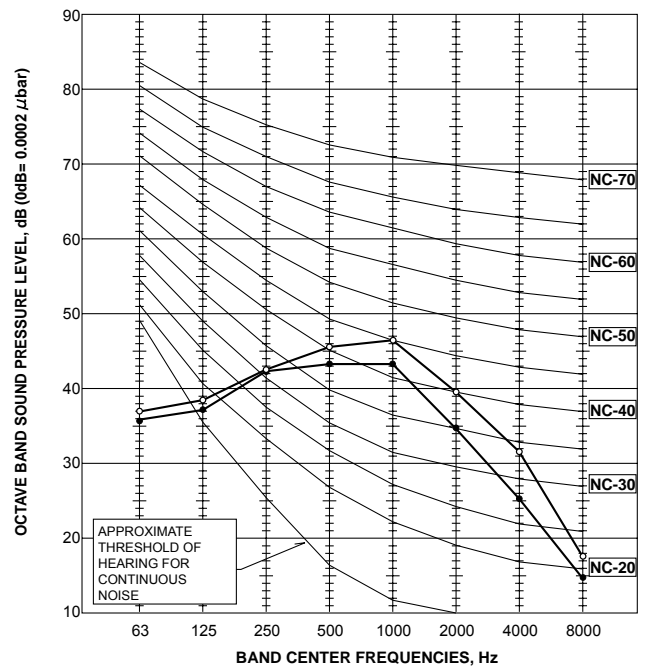
**PKA-A30FA
PKA-A30FAL**

NOTCH	SPL(dB)	LINE
High	45	○—○
Low	39	●—●



**PKA-A36FA
PKA-A36FAL**

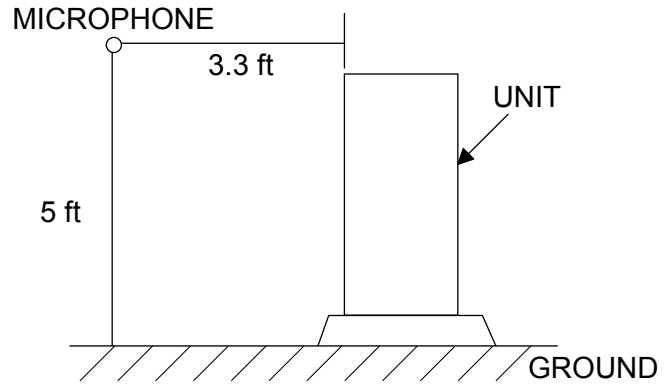
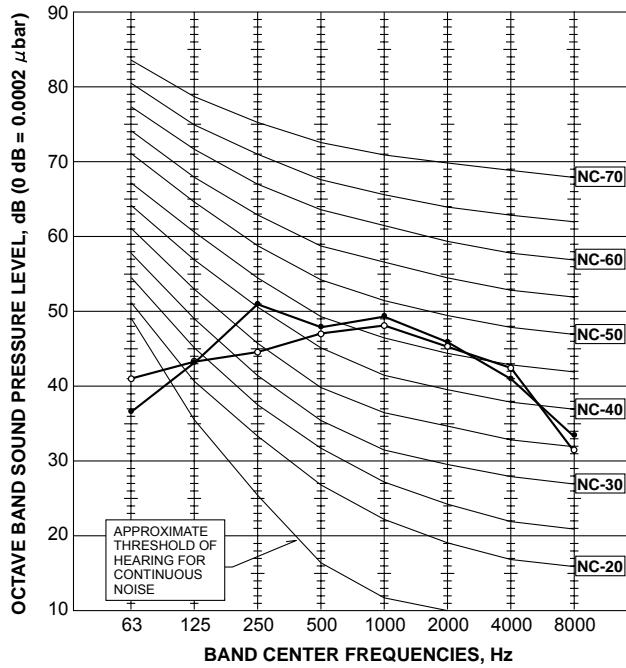
NOTCH	SPL(dB)	LINE
High	49	○—○
Low	46	●—●



9-2. OUTDOOR UNIT

PUHZ-HA30NHA
PUHZ-HA36NHA

MODE	SPL(dB)	LINE
COOLING	52	○—○
HEATING	53	●—●



10

OPTIONAL PARTS

10-1. INDOOR UNIT

Part Name	Model Name	Applicable model
Remote sensor (extensible)	PAC-SE41TS-E	All models
Connector for CN51 (output for remote display + pulse12V input)	PAC-88HA-E(1pc.) PAC-725AD(10pcs.)	
Connector for CN32 (remote ON/OFF)	PAC-SE55RA-E	
Connector for CN24 (Back up heating)	PAC-SE56RA-E	
Connector for CN30 (LLC)	PAC-SE57RA-E	
Power supply terminal kit	PAC-SH55HR-E PAC-SH98HR-E	
Decoration panel with Wired remote controller	PLP-42BAMD	PLA-A·BA
Decoration panel	PLP-40BAU	
Multi-function casement	PAC-SH53TM-E	
Flange for fresh air intake	PAC-SH65OF-E	
High-efficiency filter element (PAC-SH53TM-E is needed.)	PAC-SH59KF-E	
i-see sensor corner panel	PAC-SA1ME-E	
Wireless signal receiver	PAR-SA9FA-E	
Wireless remote controller kit	PAR-SW96U-E	
Space panel	PAC-SH48AS-E	
Air outlet shutter plate	PAC-SH51SP-E	
L shape connection pipe	PAC-SC84PI-E	

10-2. OUTDOOR UNIT FOR PUZ-HA30/36NHA

Part Name	Model Name
M-NET adapter	PAC-SF80MA-E
A-control service tool	PAC-SK52ST
Drain socket	PAC-SG61DS-E
Air outlet guide(HA30/36 needs 2 pieces.)	PAC-SG59SG-E
Air protect guide(HA30/36 needs 2 pieces.)	PAC-SH63AG-E
Drain pan	PAC-SG64DP-E
Distribution pipe for twin use	MSDD-50SR-E



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